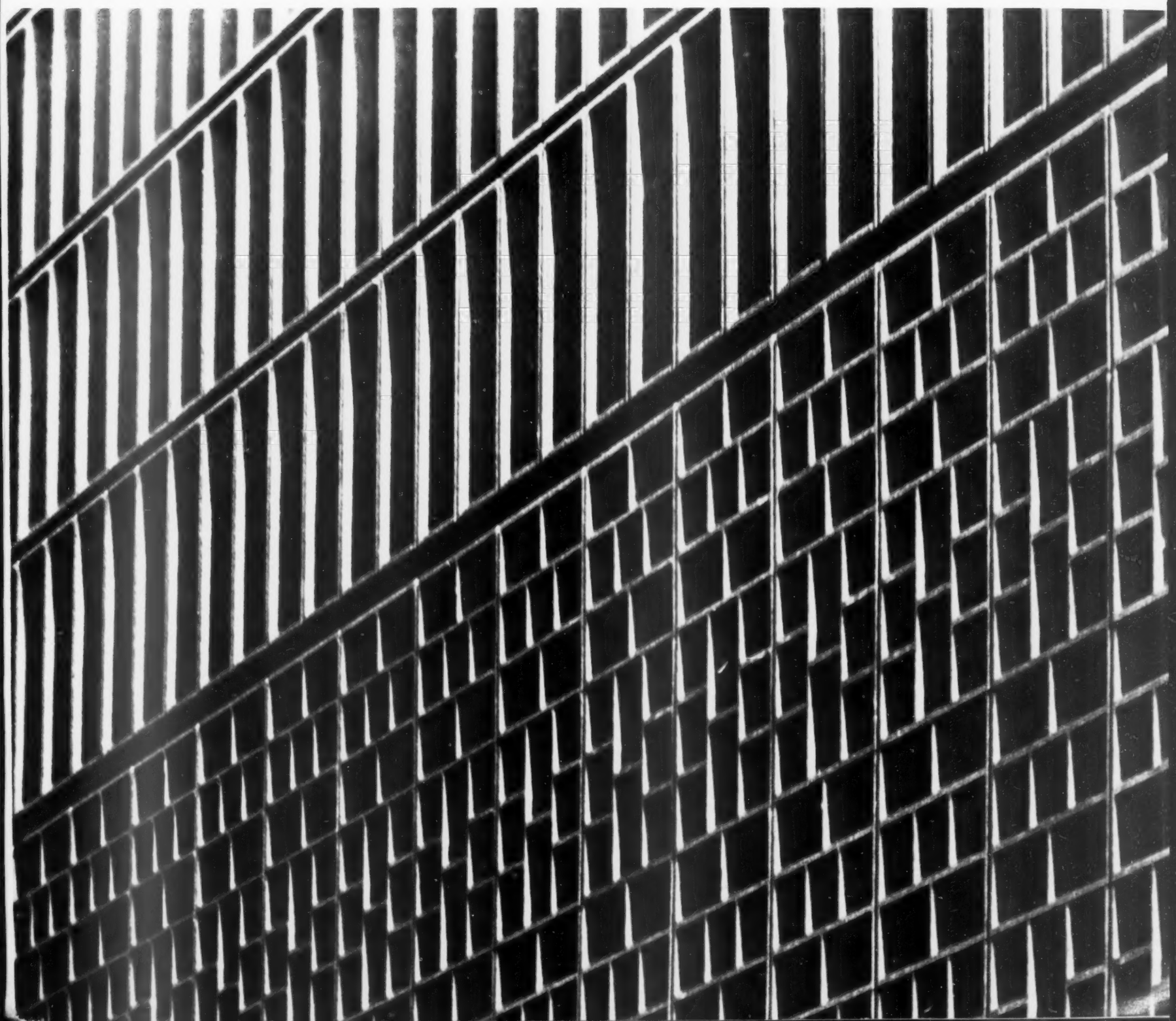
architectural & engineering

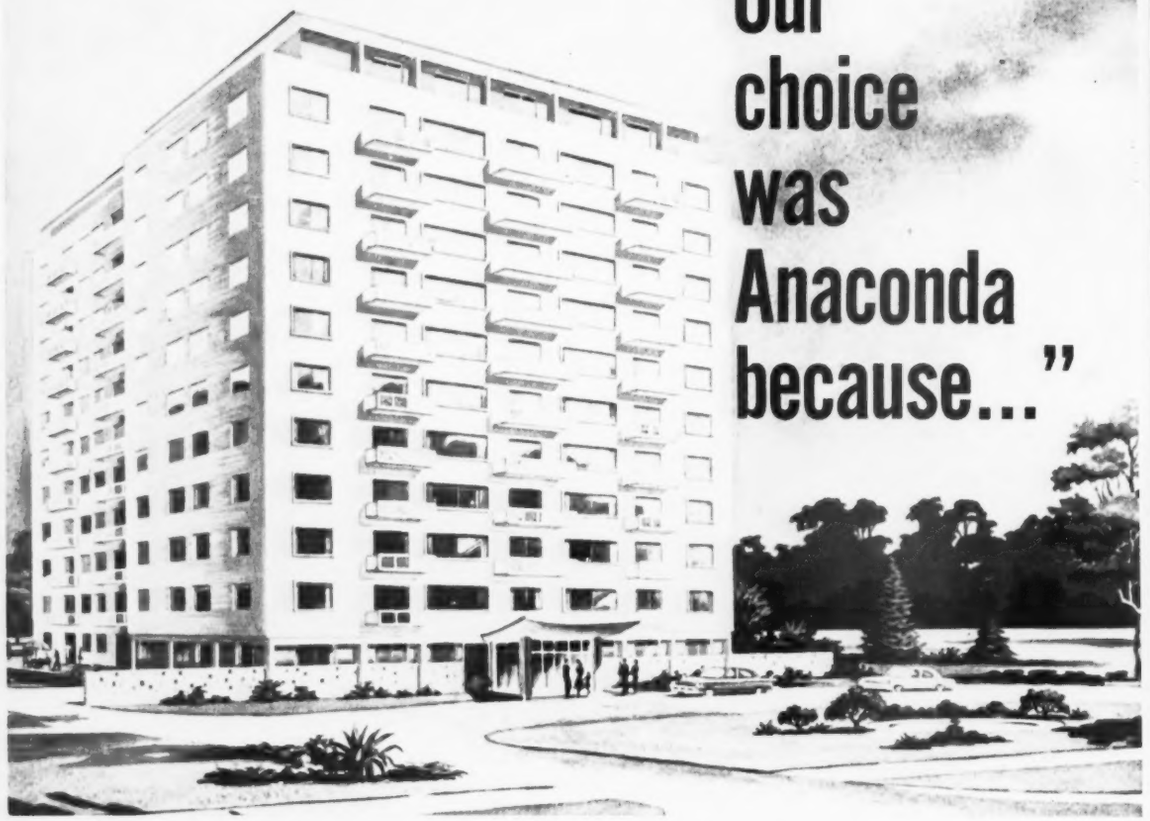
NEWS

OCTOBER 1961 VOLUME 3 NUMBER 10

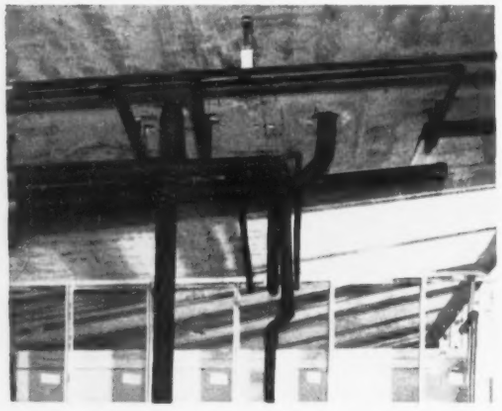


33,000 FEET OF COPPER TUBE FOR WATER SUPPLY AND SANITARY DRAINAGE

"Our choice was Anaconda because..."



IMPERIAL GARDEN APARTMENTS, Syracuse, New York. Architect: Edward C. Roock; General Contractor: Wm. C. Pahl Construction Co.; Plumbing and Heating Contractor: Robert Pearson Co., Inc.; Distributor for Anaconda: Syracuse Heating Supply Co.



In the Imperial Garden Apartments, Type L Anaconda Copper Tube in sizes ½" to 2" was used for hot and cold water lines; 1½" to 4" Type DWV, for sanitary drainage.

"We used approximately 33,000 feet of copper tube for the water supply and sanitary drainage systems in this modern apartment building. *Our choice was Anaconda because* we have always experienced a uniformity of quality which has given us, without exception, trouble-free installation on all our projects. The ease of handling copper tube produced a speedier installation than possible with other materials. Limited work space is no problem when using copper tube and solder-joint fittings."

This statement by Rowland Pearson, Secretary and Treasurer of the plumbing firm, sums up the many advantages of Anaconda Copper Tube. For complete information about Copper Tube and Fittings for general plumbing, heating, air conditioning and refrigeration, write for free copy of Publication B-1, Anaconda American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.

61-726

ANACONDA® COPPER TUBE AND FITTINGS

PRODUCTS OF ANACONDA AMERICAN BRASS COMPANY

Available through plumbing wholesalers

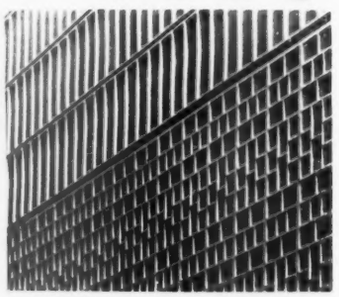
Circle 100 for further information

SUBSCRIPTION POLICY
Architectural & Engineering News is published monthly by Hagan Publishing Corporation, 500 Bloomfield Avenue, Montclair, N. J. Circulated without charge to Architects registered in the United States and licensed Professional Engineers designated by those architects as their consultants in the structural, mechanical, and electrical aspects of architecturally designed construction. **Copyright 1961, Hagan Publishing Corporation. All rights reserved. Printed in U.S.A.** **Address all correspondence to: Architectural & Engineering News, 500 Bloomfield Avenue, Montclair, N. J.**

BPA

This month's issue examines the CURTAIN WALL in its most recent technical manifestations. These include problems of responsibility (p. 30), standardization of components (p. 8), use of plastics (p. 32), of precast concrete (p. 26), and a "postscript" on sealants (p. 19). Cover design by Tony Palladino is based on a photograph of the Denver Hilton Hotel, by I. M. Pei.

architectural engineering **NEWS**



10

David B. Hagenbuch
co-publisher

Edward J. Fregan
co-publisher

Stephen A. Kliment, AIA
editor

Paul J. Geiger
associate editor

Chas. K. Robinson
assistant editor

Tony Palladino
art director

Marianne Fuhrmann
editorial assistant

Lisa Caplan
editorial assistant

Bob Wilson
production and business manager

Edna Lindner
circulation assistant

technical advisory panel
structural engineering: Martin Lovett, PE

building technology: Samuel S. Alderstein, AIA

mechanical and electrical engineering: Henry Wald, PE

field construction: R. Cornell Hooks, AIA

Materials of construction: Albert G. H. Dietz, Sc.D.

13 Integrating the solar screen
19 Sealants: question and answer period
26 Some criteria for selecting a precast curtain wall
30 The metal curtain wall: whose responsibility?
32 Report on new plastic curtain-wall developments
2 Gazette
3 Mail
8 Forecast: trends in curtain-wall standardization
10 A/E news
39 Products, equipment, materials
61 Literature
73 Preview 35: State office building for Trenton
79 Documents
80 Names: William Lescaze FAIA
81 Books
83 Digest 34: public entrance doors—design criteria and checklist
85 Editorial
86 Index to advertisers

Reader service cards facing pages 1 and 86

GAZETTE

CRICHTON C. CALLAWAY, JR., has joined the firm of Charles Luckman Associates, architects and engineers, as vice president in charge of its office building division.

STEPHEN CRANE CARROLL has been appointed associate professor of architecture-planning at Columbia University's School of Architecture.

KANU R. GANDHI, a grandson of Mahatma Gandhi has been appointed a research assistant in engineering at MIT. Mr. Gandhi is a civil engineer for the Government of India.

GLENN M. MONTGOMERY PE, has been appointed to the Committee on Standards and Tests and the Committee on Building Code Amendments of the city of Chicago, Ill.

WILLIAM W. CAUDILL AIA has been selected as chairman of the department of architecture, Rice University, Houston, Texas. Mr. Caudill is a partner in the architectural firm of Caudill, Rowlett and Scott. He will continue his practice.

DR. SIDNEY F. BORG, head of the civil engineering department, Stevens Institute of Technology, has been appointed to the National Panel of Arbitrators of the American Arbitration Association. He will serve in disputes over commercial contract performances.

HENRY VAN LOON AIA has joined the urban design section of Perkins & Will, architects and engineers, at that firm's White Plains, N. Y. office. He was formerly executive director of the Pennsylvania State Planning Board.

JAMES R. CHAMBERS PE, was recently elected National President of the Illuminating Engineering Society. Other officers elected at a meeting of the Society's Council in New York were: J. Dixon Mitchel, vice president; Charles L. Amick, general secretary; and Arthur C. Barr, treasurer.

ROBERT J. PAINTER PE, was cited by the American Society for Testing and Materials for "outstanding and effective leadership as its executive secretary." Mr. Painter was then named executive secretary Emeritus of the Society.

BROTHER AMANDUS LEO, FSC, dean of the school of engineering, Manhattan College, Bronx, N. Y., recently retired.

office announcements

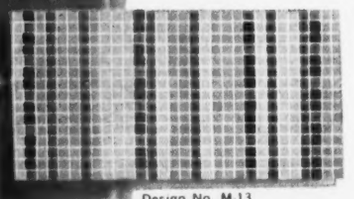
FRANCIS J. GOLDBERG, architect, has relocated his practice to 1225 Broadway, New York City.

JOHN E. EVERSON PE, has been elected a partner in the firm of Parsons, Brinkerhoff, Quade and Douglas, engineers. Mr. Everson is manager of the firm's San Francisco office.

CLIFFORD D. WILLIAMS PE, has founded a new engineering con-

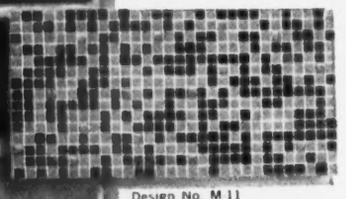
Have you discovered
the wonderful decorative possibilities of

HORIZON



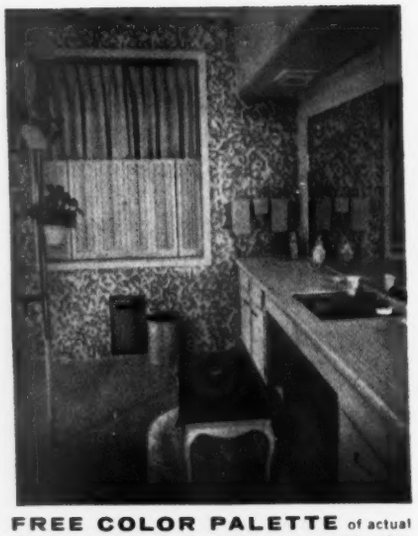
Design No. M-13

Design No. M-15



Design No. M-11

Design No. M-5
Actual size tiles



FREE COLOR PALETTE of actual tiles showing complete range of 58 different available colors will be sent without cost to architects and designers who write on their professional letterhead to Dept. **AE-60-10**

Circle 101 for further information →

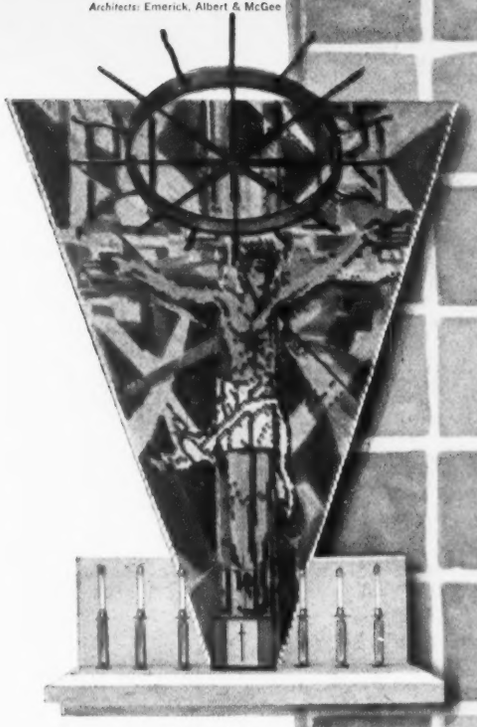
of

TILE

.the new

glazed ceramic mosaic produced in the U.S.A. by Suntile

Architects: Emerick, Albert & McGee



The Crucifixion—
an 11'x15' mosaic mural
St. Andrew's Church
Columbus, Ohio
Muralist: Charles L. Madden
Resurgere Associates,
Phila., Pa.

Here's a sure-fire way of giving your interior wall designs an interesting fresh appearance . . . *Design them with* HORIZON TILE. This new, colorful wall tile has an informal, handcrafted appearance that's beautiful beyond description.

HORIZON TILE achieves its distinctive appearance through the intentional variation and irregularity of its shape, its surface texture and its 58 beautiful color shades that range from soft pastels to solid or textured tones.

Whether you use HORIZON TILE to create a beautiful mosaic mural, like the one shown here, or use one of the many interesting "Buckshot" or "Striped Pattern" designs created by Suntile's Design Department, you'll find that HORIZON TILE adds greatly to the beauty of your finished wall.

HORIZON TILE, made in America by Cambridge, is available through your local Suntile dealer. His name is listed in the Yellow Pages of your telephone directory.

OUR DESIGN DEPT.

under the direction of George Limke is ready to assist you with your tile design or layout problems. Send us your plans or elevations for suggested tile applications, or let us put your own tile designs in layout form.

THE CAMBRIDGE TILE MFG. CO.

P.O. Box 71, Cincinnati 15, Ohio

Design No. M-2
Actual size tiles

GAZETTE

sultant firm known as C. D. Williams and Associates, with offices in Augusta, Georgia.

LEWIS S. GOODFRIEND & ASSOCIATES, acoustical engineers, has relocated its offices and laboratories to 48 Notch Road, Little Falls, New Jersey.

W. E. GREEN, architect, has begun practice at 130 W. Liberty Drive, Wheaton, Illinois.

MEYER DORFMAN PE, has established his offices at 142-04 Bayside Avenue, Flushing 54, New York.

THE AMERICAN SOCIETY OF CIVIL ENGINEERS announce that the new mailing address of the Society is United Engineering Center, 345 E. 47th Street, New York City.

C. HERBERT PASEUR has been elevated to full partnership in the architectural firm of Caudill, Rowlett and Scott.

CARL C. BANKEMPER, architect, has established the new firm of Carl C. Bankemper & Associates at 319 Scott St., Covington, Kentucky.

MAIL

Fall-out protection for schools

TO THE EDITOR:

There seems to be some difficulty over interpretation in the article *Fallout Protection for Schools, by Milo D. Folley AIA*, (A/E NEWS *April 1961*).

First, a shelter providing protection to lower the internal dose to 50 R/hr. is grossly inadequate to protect the occupants. Since the mean-lethal dose (that dose causing 50 per cent fatalities among those exposed) is about 400 R, simple division shows that half the shelter's occupants will receive lethal doses in a little over 8 hours. (Incidentally the glossary entry, *Roentgen*, indicates that 400 R is a lethal dose to 5 per cent of those exposed; this should be 50 per cent). It could be that Mr. Folley intended the 50 R/hr to be 50 mR/hr, one mR being 1/1000th of a Roentgen.

Second, the *Basic shielding data* demonstrates the same difficulty. These values of dose rate are far in excess of those which would permit survival. They are high by at least a factor of 1000.

THOMAS G. BASSETT, PE
Rowe, Massachusetts

TO THE EDITOR:

In your reply to me you spoke of the uncertainty in the minds of the experts as to what constitutes a radiation hazard. . .

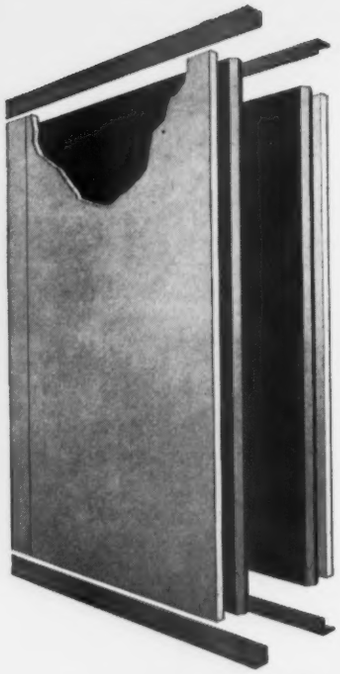
By extrapolation to man from other animals it has been found that a mean-lethal whole-body

← Circle 101 for further information

SPACE SAVING

1½- and 2-hour fire ratings

Up to 46-db sound transmission loss rating



DOUBLE-SOLID PARTITIONS
A double row of 1-inch gypsum coreboard spaced apart to accommodate all types of mechanical installations; ⅛-inch gypsum wallboard face layers laminated to each coreboard outer surface. Two-hour fire rating, 46-db average sound transmission loss rating.

USG® GYPSUM DRYWALL SOLID PARTITIONS

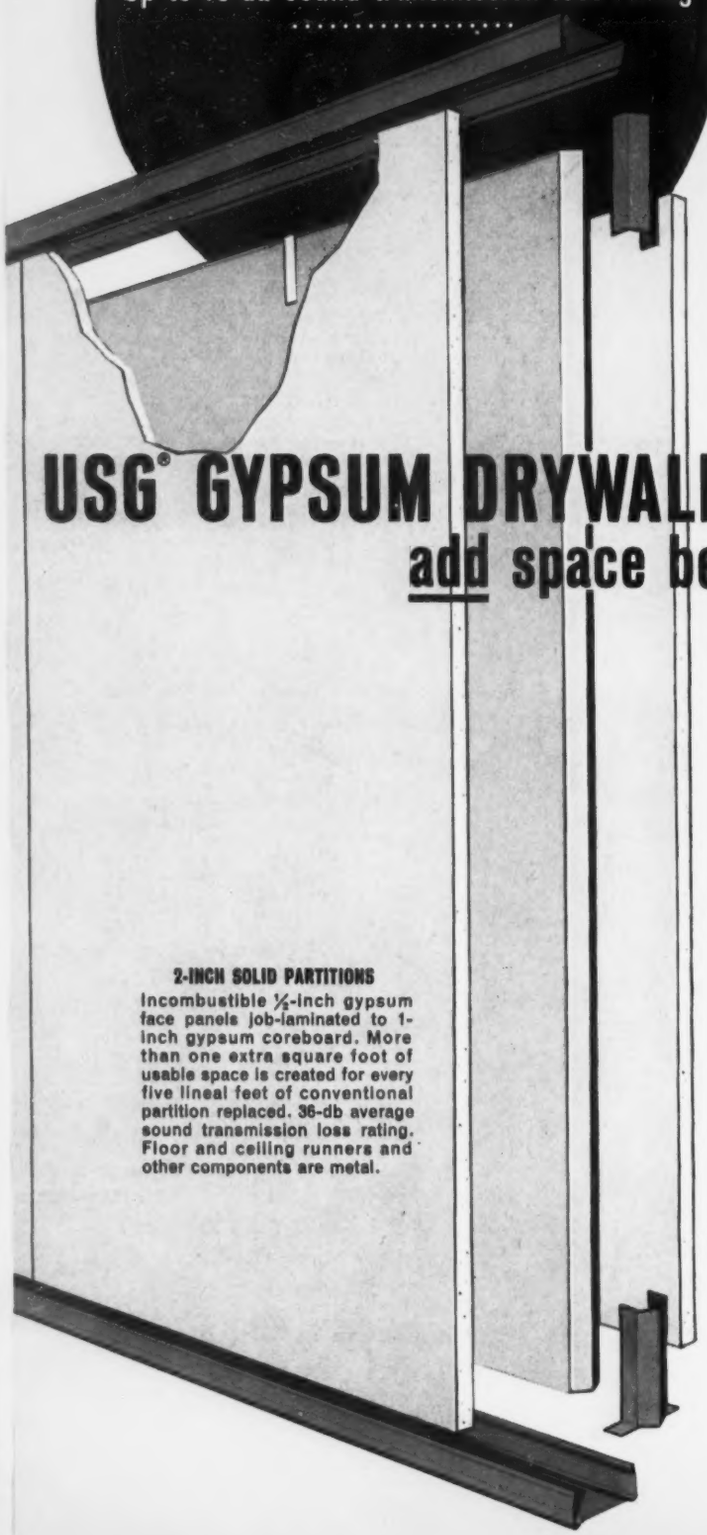
add space because they save space

Gypsum drywall eliminates moisture problems, speeds completion, and helps lower construction costs. Check these extraordinary features:

- Low material cost, minimum number of components.
- Fast, labor-saving installation.
- Unusual design flexibility.
- Up to twelve-foot height.
- Job-erected; unexpected layout changes handled easily.
- Versatile; for all types of new construction, remodeling.
- Strong; can support heavy-duty fixtures.
- Clean drywall construction.

See your U.S.G. representative for more information, or mail coupon. In Canada, contact Canadian Gypsum Company, Ltd., Toronto and Montreal.

2-INCH SOLID PARTITIONS
Incombustible ½-inch gypsum face panels job-laminated to 1-inch gypsum coreboard. More than one extra square foot of usable space is created for every five lineal feet of conventional partition replaced. 36-db average sound transmission loss rating. Floor and ceiling runners and other components are metal.



UNITED STATES GYPSUM
the greatest name in building

USG UNITED STATES GYPSUM

United States Gypsum, Dept. AEN-12
300 W. Adams St., Chicago 6, Ill.

Please send more information on USG Gypsum Drywall Solid Partition Systems.

*Name*_____

*Company*_____

*Address*_____

*City*_____ *Zone*____ *State*_____

MAIL

short-time exposure results somewhere between 400 and 600 Roentgens. A mean-lethal exposure is one which results in 50 per cent fatalities among those exposed. Understandably, the number cannot be tied down more closely because of the paucity of experimental data. On this point there is general expert *agreement*.

An open question pertains to an acceptable chronic exposure to radiation; that is, what exposure can one receive day-after-day, 40 hours per week, throughout an individual's working lifetime, without causing undesirable physiological effects? On this question there is *disagreement*.

Generally, in time, the body can repair radiation-induced damage, such damage being damage to individual body cells. The reproductive organs, however, do not have the recuperative capabilities of the other bodily organs and the radiation effects seem to be cumulative. It is around this fact that most of the controversy on maximum permissible exposures seems to revolve. In other words, in view of the current uncertainties involved, it is a debate as to what is a permissible chronic occupational dose rate. . .

To return to Mr. Folley's article, one must consider a dose due to fall-out to be a short term near-instantaneous exposure as compared to a person's lifetime. It appears that information Mr. Folley presents advocates 40-50 R/hr. as an acceptable dose or exposure rate. This is not accentable. It would be lethal to one-half of those exposed for about 10 hours (400-500 R). A worker in the nuclear energy industry would have to be exposed to the statutory limit of 5R/yr for 80 to 100 years to accumulate such an exposure. This is clearly impossible. This is merely an indication of the conservativeness of the regulatory limits.

THOMAS G. BASSETT, PE
Rowe, Massachusetts

TO THE EDITOR:

There are two conditions which shelters are required to meet. First, there is the permanent underground operating shelter. The interior dose load is required to be quite low, because of the possibility of continued exposure, and the accumulation of radiation. It is not unusual to have a factor of 1000, or 3R/hr.

The second use is that of temporary protection, such as was indicated in my article describing a shelter for schools. I suggested a factor of 100, or 30 R/hr. I am advised also that this factor is very questionable and many authorities consider 50 R/hr. as entirely adequate for so-called "body storage." Others have indicated that 25 R/hr. is a safe load.

MILO D. FOLLEY, AIA
Syracuse, N.Y.

← Circle 102 for further information

Circle 104 for further information about YOUNGSTOWN, pp 6-7→

NEW...64-page Engineer's Catalog

It's packed solid with FACTS about the new and expanded line of Marlo Multi-Zone Air Conditioning Units...

This is more than just a brochure. It's a complete working handbook, with everything you need to select and order the *exact* unit or combination of units required to do your job most efficiently and economically.

Includes such information as:

- CONSTRUCTION DETAILS
- SPECIFICATIONS AND DIMENSIONS
- FAN AND COIL PERFORMANCE
- PHOTOGRAPHS, CHARTS, DIAGRAMS, Etc.

For Your Free Copy, See Your Marlo Representative, or Send Coupon to Us.

6109

MARLO COIL CO.
7110 S. Grand Blvd., St. Louis 11, Mo.

Please send me your new 64-page brochure on Marlo Multi-Zone Units.

Name _____

Company _____

Address _____

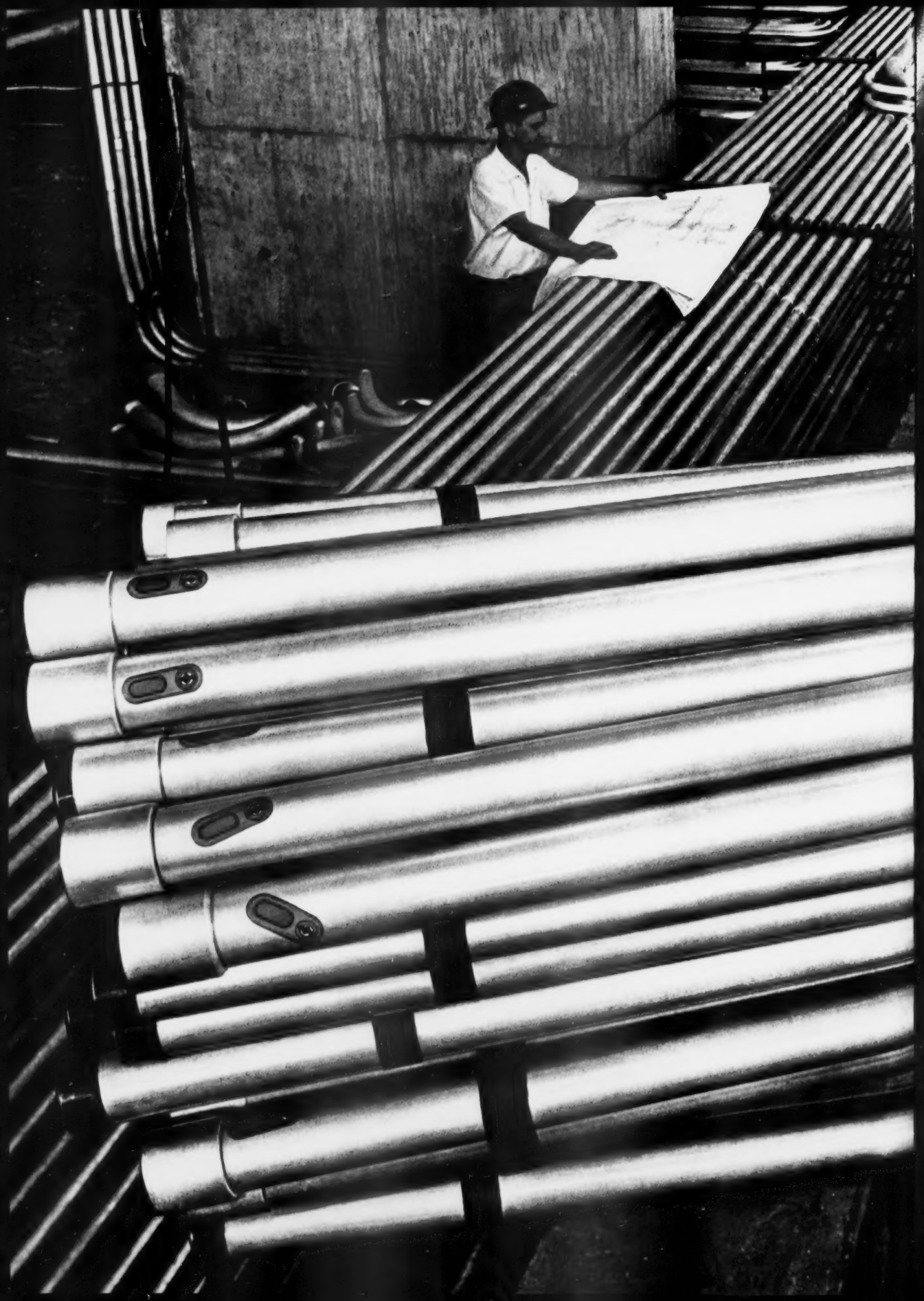
City _____ *Zone* _____ *State* _____

MARLO coil co.

Quality Air Conditioning and Heat Transfer Equipment Since 1925

WORLD-WIDE DISTRIBUTION
Marlo International Ltd.
P.O. Box Vaduz 34679
Vaduz Furstentum Liechtenstein

Circle 103 for further information



WEIGHT LOSS DUE TO ATMOSPHERIC CORROSION
after 3100 days exposure.

RESISTANCE TO SOIL CORROSION
13 Soils Ranging from 2.6 pH to 9.4 pH

	CARBON STEEL		YOLOY		WROUGHT IRON	
Time (Years)	Wt. Loss*	Penetration**	Wt. Loss*	Penetration**	Wt. Loss*	Penetration**
2	6.1	52	4.3	41	4.8	48
5.4	11.1	81	7.2	52	8.8	75
7.4	12.1	89	9.5	79	10.9	89
9.3	17.4	88	10.6	79	12.2	97
14.3	19.7	107	11.8	93	16.3	98

*Wt. Loss, oz/ft² **Penetration—mils (Average Max.)

SEA WATER IMMERSION TEST

Material	Days In Test	Wt. Loss (Grams)	Corr. Rate		Pitting—Mils	
			Mdd	IPY	Max.	Avg.
Mild Steel	2162	1439	36	.007	Perf.	128
Hand Puddled Wrought Iron	2384	1401	32	.006	Perf.	115
Mechanically Puddled Wrought Iron	2384	1247	28	.006	139	80
Yoloy	2429	1616	25	.005	90	42

YOLOY

Exclusively from Youngstown—corrosion resistant steel conduit you can depend on

Hang it in the air. Bury it in the ground. Sink it in the sea. Use Youngstown rigid Yoloy steel conduit in impossible places where corrosion eats other conduit away. Use it because Yoloy lasts.

This better, tougher, bendable copper-nickel alloy steel conduit has up to 6 times the corrosion resistance of carbon steel conduit. You can cut, bend, thread, work, install and fish it with ease.

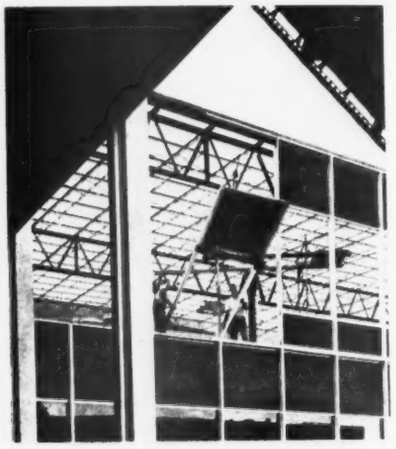
High replacement costs demand a special conduit like Yoloy. Youngstown research created it. Electrical distributors, supplied from Youngstown stocks, will deliver it in the exact quantity, size and kind you need—wherever you need it: ½" to 6" in Hot Dip Galvanized, Black Enameled or EMT.

With Yoloy, you'll get the same uniform high quality that has made Youngstown Buckeye Conduit famous in the industry. Conduit you can depend on. U.L. approved. All from modern Youngstown—largest producer of rigid steel conduit in the world.

Youngstown – growing force in steel

For information about Youngstown Yoloy Steel Conduit, write: Dept. 26B.
The Youngstown Sheet and Tube Company, Youngstown, Ohio

TRENDS IN CURTAIN-WALL STANDARDIZATION



FORECAST

Several years ago the author had the interesting assignment of arranging a series of meetings to be held in major cities of the United States to discuss new developments in curtain walls, involving engineers who had been developing curtain wall systems and architects who would be using these ideas. These meetings could best be described as an attempted meeting of minds of engineers—*primarily concerned about metal systems that could be produced efficiently and function satisfactorily, and the* architects, *who were primarily concerned with the effect of this industrialization on their aesthetic objectives. What has happened since then and what is likely to happen now is discussed in the following article.*

by R. M. Baker*

One of the ideas prominent in any curtain wall discussion used to be modular standardization. The engineers felt that arriving at some selected standards in dimensions would be a big step forward; the architects were worried about the individuality of their design being sacrificed on the altar of efficiency.

Today, both sides of this debate appear to have won a point. What course has evolution followed in reaching this point?

1 Physical conditions which curtain walls must meet have been more influential than *philosophical* theories.

2 Standardization of *engineering principles* has been much more important than standardization of *size*.

3 Flexibility, within these engineering principles, has given the architect a wider range of choice than did the building components of the nineteenth century.

Physical conditions and design

After the architects and engineers had left the round table discussions, and gone back to the boards to plan actual curtain wall projects, they found that some of their philosophical concerns soon became submerged in meeting real problems of working out good designs. In other words, they became engaged in working out provisions for handling such practical problems as the *expansion and contraction of metal, heat transmission,*

* *Mr. Baker has had a varied series of marketing responsibilities with Kawneer Company for the past eight years.*

weathering, and installation method. These practical problems, and their solutions have been dominant factors in metal curtain wall design development.

Expansion and contraction

Everybody had worked with coefficients of expansion of materials, and had had some academic familiarity with the principles of thermal expansion. Now this emerged as one of the determining factors in a successful wall. For example, the fact that aluminum expands about .155 inches per 10 feet of length in a 100° F. temperature rise was not a crucial factor in a conventional building, but in the expanse of a modern curtain wall it needs a lot of consideration.

This fact results in three potential problems which the curtain wall designer must allow for. First: thermal expansion, when built up through a longer length of a wall member (and particularly many such members in parallel) can accumulate a force strong enough to move even columns. Second: the difference in the expansion of metals, the different coefficients of steel in the structure and aluminum in the curtain wall grid, for instance, must be considered. Third: expansion and contraction plays an important part in the wall's capabilities of keeping out water. If metal members move as the result of thermal expansion, this must affect the weather seal at the joints of metal members. This simply means that the designer must provide for this movement.

Weathering

Handling water is the critical problem of a curtain wall. There has been a body of thought which places great reliance on sealants to prevent water infiltration; and indeed, the development of good sealants has been an important curtain wall improvement. However, as we recall that metal must move with thermal expansion, we immediately see difficulty in trying for *absolute* prevention of all moisture infiltration and still maintain metal joints that are "working." Heavy use of sealants improves this situation, but does not eliminate it.

We have therefore concluded that provision must be made in the engineering of *conventional** wall systems for some moisture getting past the outer membrane of the system, and into the wall system itself. Thus, more sophisticated wall designs now provide for internal drainage for moisture inside the wall so that it is channeled out again rather than being permitted to move inside the building. More primitive designs assumed that water could be kept entirely outside the wall; but they suffered from not having any provision for taking water out again. This does not mean that such an internal drainage wall system does not employ all of the same leakage prevention techniques; but it does not rely upon these techniques exclusively.

Heat transmission

Ironically, this aspect of wall system design is often over-emphasized. Careful consideration of the rate of flow of BTU through the wall is of course important. However, so much emphasis is sometimes placed on this portion of the specification that two detrimental effects result. First, the architect can go beyond a good insulated panel which would give *optimum* performance, and proceed towards a *maximum* insulation (*U* factor) specification which puts a lopsided part of the building budget into this one section; this also detracts his attention from more crucial items, such as the internal drainage system. It is not uncommon to see a panel specification with an incredibly low *U* factor; but this often involves an initial cost that is probably higher than the operating money required to pump just a little more heating and air-conditioning into the building.

Secondly, it is sometimes forgotten that the panel portion of the wall is still a fraction of the over-all wall system; putting all the budget into damming up this area of heat loss does nothing about the other areas of transmission. This part of the plan is approached best as a question of *balance and economics.*

Installation method

Selecting the right wall system hinges heavily upon feasible installation methods. This is a subject enough for a book in itself, so no attempt is made here to enter into a full discussion of such a large subject. We simply point out here that installation method is one of the criteria upon which wall development is based more emphatically than it used to be during the philosophical debates of a few years back. The architect and engineer to-day will analyze closely how they can eliminate or reduce scaffolding costs; the practicality of working a boom-hoist from the roof; the feasibility of installation from inside and working from the floor slabs; the alternative methods of anchoring curtain walls to the structure; and details of joining and butting sections.

It seems at this interim stage in the evolution of wall systems that these *physical* conditions of thermal expansion, weathering, heat transmission, and installation method have been more influential than the theoretical concerns of earlier discussions.

Modules versus principles

Standardization of engineering principles has emerged as more important than modular standardization. One day a few years ago there was a highly significant telephone call from the principal of a nationally known firm of architects. He had just finished one curtain wall project, and was starting another.

"We have been discussing preliminary layouts on the new job," he said, "and it occurred to us that there is no reason why we should not utilize all the engineering that went into the other project. Naturally, they are two different buildings and there would be a lot of differences. The size of the building is different, and so are the size and appearance of the wall; but, still, I think we would do well to use that same split mullion design; and I want the same internal drainage system; and the same type of laminated panel would work well here too; also, I favor the use of the same anchoring detail we used last time."

"There is no reason at all why those engineering ideas would not do a good job on this building too," we replied. "That's our contention too," declared the architect. "We should also be saving a lot of engineering time and motion by using over again what we already know about the last job."

This conversation was significant because it typified a new way of thinking, namely that settling on some proved curtain wall engineering principles which are tested in practice is more intelligent than starting every job from scratch. In the same way, a custom designed automobile does not call for a complete original experimentation with internal combustion to achieve individuality. The designer can utilize all the accumulated engineering knowledge and many standardized parts of previous automobiles to move on to new styling and performance.

We now see why modular standardization has been secondary to these functional engineering standards. It has been more important to decide on *design* of a mullion, for example; the question as to whether that mullion is 20′ long or 19′ 6″, would then depend upon *dimensions* of the given building. Curtain wall units for commercial and institutional buildings have not been stock, mass-produced sections, taken from warehouse to job. They have been *standardized in engineering detail,* but highly customized in appearance, size, and application.

Universal standardization of modules has not been required. However, determining uniform modules (of, say, 4 or 5 or 6 feet) within a given project is an important efficiency factor. But it has not been imperative to establish a limited number of uniform modules for all curtain wall projects.

Flexibility within standards

The use of the word "standards" too often connotates the implication of restriction on aesthetic objectives. Is this really so?

One of our research engineers working on a wall system based on pre-engineered details recently took the trouble to calculate possible combinations that could be achieved within this system. After working his slide rule for about an hour, he announced a total of 33,000 different curtain wall units, adding that he had not yet multiplied out all the elements. Within this one pre-engineered system alone, the architect could make a very wide number of choices in color, dimensions, arrangement of components such as windows, panels, fixed glass, and number of horizontals and verticals in the grid.

Working within these standards, previous engineering experience and much of the production economy of pre-engineered details is used to economic advantage.

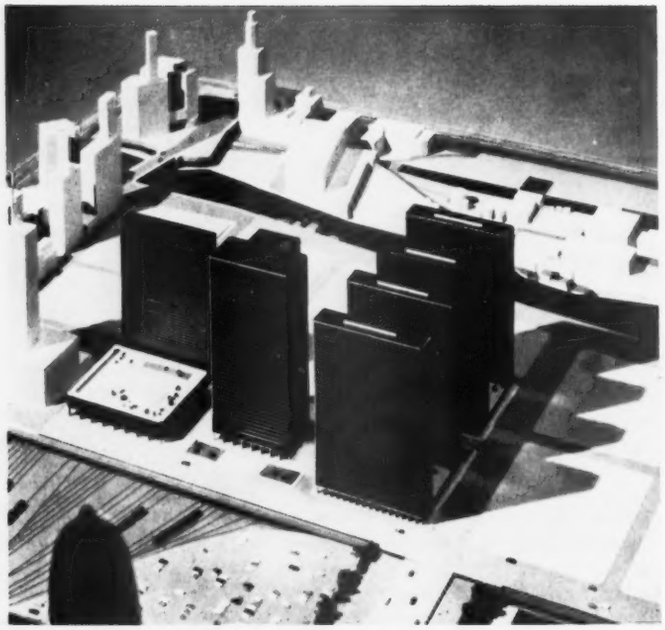
There is now emerging a trend toward a more complete package by one major sub-contractor, to whom the architect and general contractor can look for a completely unified responsibility. A few nationally known manufacturers have already come forth with a fairly mature complete-package and responsibility capability, and this will be increasingly important as the curtain wall field moves ahead.

* *There are exceptions to this generalization, such as a wall system employing neoprene gaskets in joining the wall components. Proper use of the neoprene gasket can provide a hermetic seal which is impossible in the conventional metal system.*

← Circle 104 for further information about YOUNGSTOWN pp 6-7

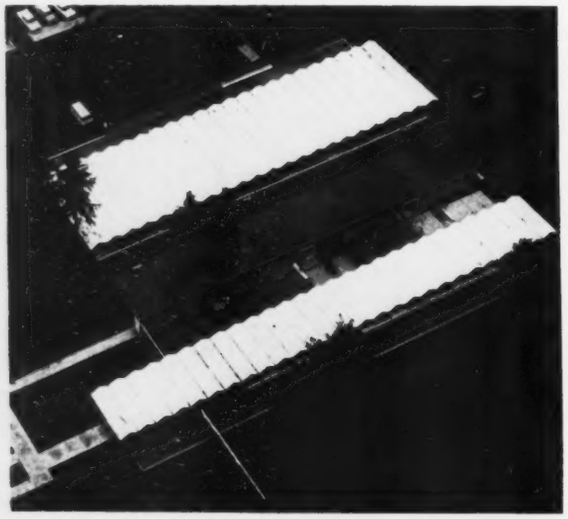
A|E NEWS

PHOTOGRAPH shows final design of model of proposed headquarters building for the Columbia Broadcasting System in New York City. Architect is Eero Saarinen and Associates, and structural engineer is P. Weidlinger (Photo by Ezra Stoller.)



BIRD'S-EYE VIEW of model of Illinois Center, a $500 million apartment-office-hotel complex scheduled for construction on Illinois Central RR air rights west of Lake Shore Drive, Chicago. The four 52-story apartment buildings are to be built two at a time, the first two to be completed in 1963. Architects and engineers: Naess and Murphy.

PICTURED IS an aerial view of the recently dedicated Simpson Timber Company research center, situated near Seattle, Wash. Using wood as its principal structural material, the building features glued laminated columns, folded roof plates and diamond box-beam roof construction. Architect is Paul Hayden Kirk FAIA. (Photo by Forde.)



NEW HEADQUARTERS for the Illinois Agricultural Association was designed by Graham, Anderson, Probst and White. The $6 million building is placed in a position diagonal to the sun's path. The 20' overhang and the concrete fins—spaced 5' o.c.—act as sun shade devices. Mechanical and structural design was done in the architects' office.

The number of architects with $100,000 or more in new design business went to a record high for the second consecutive year in 1960, according to a report in the *Engineering News-Record*. Those in the $1 million-or-more category increased their number by 10 per cent to a total of 2,144. The middle volume group ($500,000-$1 million) rose 13 per cent to 833, while the smallest volume group ($100,000-$500,000) dropped 5 per cent to 810.

Architect-engineers in the $100,000 and above group dropped for the second consecutive year, to a total well below the 1955 record of 494.

Consulting engineers in this group slipped from a record of 1,805 in 1959 to 1,794 in 1960.

AIA honor awards program set

Registered architects practicing in the United States have been invited by the AIA to submit current work, completed since January 1, 1957, for consideration in its 1962 National Honor Awards Program.

Further information on how entries may be submitted is contained in a bulletin available from the AIA in Washington, D. C.

The closing date for entry slips and fees is November 28, 1961.

Vetoes standards bill

In spite of last minute efforts by the California Council of the AIA and other members of the construction industry in California, Governor Edmund Brown recently vetoed a state measure designed to provide uniform construction regulations for state agencies.

The legislation would have strengthened the State Building Standards Commission and its powers to simplify and coordinate conflicting and contradictory building rules and regulations now issued independently by state agencies.

Adopt California Capitol plan

Governor Brown of California recently signed two measures into law which govern aspects of the planned new buildings and improvements in the state's Capitol area. The first provides for competition among architects for design of the new governor's mansion (*see* A/E NEWS *August 1961 page 8*). The second adopts as the official state plan for the location of buildings and other improvements in the Capitol area, the plan which was approved by the Capitol Building and

Planning Commission on February 15, 1961.

The competition law provides for awards to the top ten architects selected by a jury, with the first four prizes being graduated in amount. It further provides that, subject to legislative approval, the design receiving the first award be adopted as the design for the governor's mansion.

Seek architect for school board

The New York Chapter, AIA, last month called for the naming of an architect to the new board of education of New York City "to offer a vital element of leadership and help to assure that our school design and building program meet the highest standards."

In a letter to the chairman of the panel named to nominate members of the Board, Frederick J. Woodbridge FAIA, president of the Chapter, said that a distinguished architect would make a valuable contribution. He pointed out that school environment has a significant influence in education and that the architect is charged with providing the proper surroundings for effective presentation and assimilation of subjects, and with integrating the school into the community and the overall school system.

Urge use of private firms

In testimony given recently before members of the House Armed Services Subcommittee on Special Investigations, Harold P. King, president of the Consulting Engineers Council, strongly supported the continued use by state and federal agencies of the services of private enterprise and, in particular, of private engineering firms.

Pressures for increased use of Defense Department personnel and facilities, rather than private industry, and questions of relative costs between the two, are reportedly the reasons for the special subcommittee investigation.

Answering these propositions, Mr. King pointed out that the engineering profession is very much concerned that if the practice of using engineers in private practice is eliminated by government agencies, it will lead to complete destruction of an important segment of the private enterprise system.

ASCE speakers announced

To support the "Metropolis 1980" theme of its annual convention on Oct. 16-20 in New York *(see* A/E NEWS, *Sept. 1961, p. 6)*, the American Society of Civil Engineers has arranged for luncheon sessions at which prominent speakers will discuss topics related to the main theme. The special luncheons will be held on Monday, Tuesday, Wednesday and Friday of the convention week.

The speakers and their topics, in order of their appearance, will be Robert C. Weaver, administrator of the Federal Housing and Home Finance Agency—"Urban Affairs"; Samuel S. Baxter, Water Commissioner and Chief Engineer of the Philadelphia Water Department—"Utilities of the Future"; Austin J. Tobin, executive director of the Port of New York Authority—"Mass Transportation of People"; and Rex Whitton, Federal Highway Administrator — "Urban Highways of the Future."

Issue standard experience form

A new architect-engineer Experience Data Questionnaire (Standard Form 251) has been announced by the Bureau of the Budget.

Issued by the General Services Administration, with the approval of the Bureau of the Budget, the new form will go into effect on December 1, 1962, and will be used by all departments and agencies of the government, except the International Cooperation Administration.

An additional feature will be the Fifth Civil Engineering Show, also held at the Statler-Hilton Hotel, at which 29 firms will display the latest in equipment, materials and services.

BRI Fall conferences set

Seven topics have been chosen to make up the program for the Building Research Institute's 1961 Fall conferences, which will take place Nov. 28-30, at the Mayflower Hotel, Washington, D.C.

The topics slated for the program are Prefinishing of Exterior Components, Performance of Plastics in Building, Mechanical Fasteners for Wood, Design for the Nuclear Age, Identification of Colors for Building, Methods of Building Cost Analysis and reports on new research projects.

The Building Research Institute, a unit of the Division of Engineering and Industrial Research of the National Academy of Sciences—National Research Council, holds two series of conferences a year, in the spring and fall, as a part of its program to correlate and stimulate research for the improvement of buildings.

ACI to meet in Birmingham

Among the features of the 14th regional meeting of the American Concrete Institute at the Dinkler-Tutwiler Hotel in Birmingham, Ala., November

Rules and Regulations Relating to the Use of Submersible Lighting for Swimming Pools, Reflector Pools and Display Fountains.

Bulletin No. 17

17.1 General—Effective as of this date, the use of 120-volt lamps when assembled in submersible lighting units, for the illumination of swimming pools, reflector pools or display fountains, whether they are intended for side wall or pedestal mounting, is hereby prohibited.

17.2 Voltage—The permissible voltage that may be applied to lamps used for such application shall not exceed 12 volts.

17.3 Transformers—a. Step-down transformers used in conjunction with such lighting units shall be of the two-winding, isolating type and having a grounded metallic shield between the primary and secondary windings to prevent accidental contact between windings under fault conditions. b. Transformers shall be located remotely from the lighting units which they supply, and overcurrent protection shall be provided in both primary and secondary windings.

17.4 Swimming pools, reflector pools, or display fountains presently under

LIFESAVER

Underwater lighting is serious business.

Deadly serious.

Cutting corners can cost lives.

Precisely why the Stonco line is solid cast bronze. Porosity-tested. With a special low voltage transformer for safety plus.

(We've tamed the high voltage. Isolated it with a grounded shield that stops cross-over from primary to secondary. Harnessed it with a fuse factory-sealed to guard against do-it-yourself electricians.)

Even the deck box is gasketed watertight fore and aft. Keeps wiring bone dry. From surface slop, seeping water, or pool overflow caused by flash floods.

No wonder Stonco submarine lighting meets all the safety codes.

Incidentally, even our fountain lights are available low voltage.

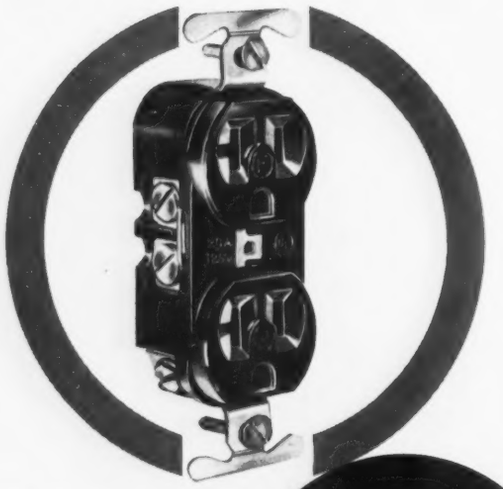
Fish have to live too.

STONCO lighting

© 1961 STONCO ELECTRIC PRODUCTS CO., KENILWORTH, NEW JERSEY / *Write for Catalog C*

Circle 105 for further information →

NEW CIRCLE F 20-AMP "U"-GROUND DEVICES



. . . Section 220-3 (b) of the 1959 National Electrical Code states . . .

"For the small appliance load in kitchen, laundry, pantry, dining room and breakfast room of dwelling occupancies, (1) 2 or more 20-ampere branch circuits in addition to the branch circuits specified in paragraph 220-3 (a) shall be provided for all receptacle outlets (other than outlets for clocks) in these rooms, and such circuits shall have no other outlets."

Designed to provide full compliance with the revised Code, Circle F's *new* No. 2532 does much more! It becomes a "universal" outlet! It accommodates appliances, heavy-duty portable tools, business machines, etc., having substantial energy requirements, where the new 20 A.-125 V. plug cap (No. 2528) is necessary. It also accommodates 15 A.-125 V. 3 wire U-ground and standard parallel blade caps. One outlet for all! Circle F's quality is tops and the price is right. Contact your Circle F representative for complete details.

CIRCLE F MFG. CO.

TRENTON 4. NEW JERSEY

Circle 106 for further information

1-3, will be an address by ACI president Lewis H. Tuthill on "Modern Resources for Better Concrete Work." Included in the other papers and reports to be given, which will total 15, will be "Design, Fabrication, and Testing of Lightweight Precast Concrete Framing," by Ross H. Bryan, consulting engineer.

Museum road show features roads

The Museum of Modern Art, New York, will soon have on tour, to museums around the country an exhibition of the art of roadbuilding. Elevated roads, multi-lane highways, interchanges, airport runways and roads incorporating buildings and towns are shown in 70 enlarged photographs, some of which are mural size.

One feature of the show is illustration of the increasing relationship between roads and architecture.

Church art group opens US office

The International Institute of Liturgical Art has opened an American office at the Hotel Biltmore in New York.

The aim of the Institute is to bring together independently recognized artists, craftsmen, iconography experts, and liturgists to collaborate with local architects in providing art of a high level for church interiors.

Plan repels US birds?

During September, J. E. Fynn of Leatherhead, Surrey, England visited New York, Philadelphia, and Chicago to demonstrate the new Scarecrow Strip bird repellent.

Scarecrow Strip is a plastic gel bird repellent, which reportedly has been successful in clearing pigeons and starlings from London's National Gallery, Covent Garden Opera House, and other famous buildings. A report on the reaction of American birds to the repellent was not available at press time.

Trestles provide church timbers

In a unique approach to the problem of limited church building budgets, the congregation of the Country Bible Church, near Enumclaw, Wash., purchased and dismantled three railroad trestles in the area and used the timbers for framing throughout their new church.

Church officials estimated that through this device and through volunteer labor they saved $35,000 on the new building.

Solar heat still too costly

Engineers at MIT have concluded that total heating by solar energy of a three bedroom house, in New England, is still not a practical reality, according to a recent report in the *New York Times*.

The findings, reported by Prof. Albert G. H. Dietz at a United Nations Conference in Rome on non-nuclear energy sources, are a result of three years of study of the operation of a solar heated house in Lexington, Mass.

While it would be possible to achieve total solar heating, the engineers pointed out, in a random climate such as New England the necessary storage space for solar heat makes the system impractical.

Furthermore, they noted, the cost of the mechanical equipment required remains higher than could be justified by any savings in fuel costs.

Scholarship applications open

Applications for the annual Arnold W. Brunner Scholarship are now being accepted by the New York Chapter, AIA, 115 East 40th Street, New York, N.Y. January 15 is the final date for submitting applications.

The scholarship, a $5,000 grant sponsored by the Chapter, is open to American architects who have advanced professional background. It calls for study in some special field of architectural investigation which will contribute effectively to the practice, teaching or knowledge of the profession. Each candidate may choose his subject of study.

NIAE awards Warren Fellowship

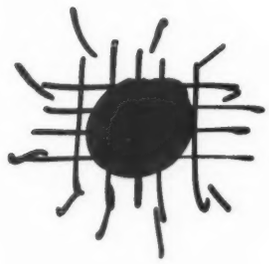
The National Institute for Architectural Education recently gave a luncheon for the winners of the annual Lloyd Warren Fellowship Competition. The fellowship is awarded by national competition and has been given since 1904, with the exception of the war years.

Alan B. Glass of Oklahoma State University won the first prize of $5,000 and Sidney R. Barrett, of Georgia Institute of Technology, the second prize of $3,500.

The competition this year consisted of a preliminary contest, executed in three days, from which those who were to compete in the final competition were selected. The problem for the preliminary called for the design of "A Center for New Countries Adjacent to the U.N."

The second part of the competition required the solution, in five consecutive weeks, of the problem "A U.N. Delegation Headquarters for the African Countries."

Integrating the solar screen



The author discusses the various problems of integrating the solar screen with the curtain wall. He does so from the point of view of design and engineering, and then goes on to review questions of fire-safety, glass-washing, and psychological effect.

by Sidney J. Folse, Jr. AIA*

The all-glass building in its earliest rationale was concerned principally with the visual release of the bounds of enclosed space. That in most instances, this penetration to the exterior could be effective only when the position of the sun permitted the opening of the drapes or blinds, was considered a negligible disadvantage in view of the aesthetic advance. The problem of glare and solar heat gain, coupled with the desire to use the glass more effectively, soon brought the development of exterior shading devices, such as overhangs and louvers; these were, however, limited in application, and, because of glare, drapes and venetian blinds were still necessary. The more recent development of heat absorbing and glare reducing glass contributed greatly to control, but the additional problem of comfort as affected by radiation from the glass made this alone only a partial solution.

The architects of the South, faced with nine months of summer and air-conditioning in virtually every building built, became pioneers in developing the SOLAR SCREEN—a non-operating exterior shading device which provides both solar and glare control while permitting vision through the glass and screen. (The idea is not original, since a similar but limited device has been available for many years in the form of louvered insect screens.)

Early schemes in masonry

The earliest designs employed standard masonry units laid in a pattern, with cells horizontal. The small size of the aperture available in standard units led to the design of special masonry units for solar screening, *(see figs. 1 and 2)* although it was seldom possible to achieve total control consistent with the degree of vision desired. The permanence of such a device, however, made it possible for the first time for air-conditioning engineers to calculate and take advantage safely of the percentage of shading available. This effected a saving in initial cost as well as in operating the air-conditioning system. At this point in its development, the solar screen became an economic force in addition to its architectural significance in maintaining the visual freedom of the glass wall.

The desire to integrate more closely the solar screen with the metal and glass curtain wall naturally led to the exploration in the field of metal screens. The New Orleans Public Library was the first successful achievement of this integration, providing total solar and glare control. In this building an aluminum screen suspended about 4′ in front of the glass wall, acts as a shield against sun penetration after 9:30 a.m. *(see fig. 3)*.

** Mr. Folse is an associate in the New Orleans architectural firm of Curtis and Davis. He is also a member of the Board of Directors of the New Orleans Chapter, AIA.*

Because shielding was complete during the air-conditioning season, it was possible for the air-conditioning engineers to discount solar load entirely (except for radiation) and the result was omission of the normal separate exterior cooling zone. This major saving in air-conditioning equipment, drapes and blinds, almost offset cost of the screen. Since all light entering through the glass was reflected light, the screen also provided glare control; it was, however, coupled with a glare-reducing plate-glass curtain wall to provide maximum control.

Do screens pay for themselves?

Because of the newness of the concept, but more so because it appears to be costly, it is going to be necessary for architects to continue to prove the economics of the metal solar screen to their clients. The principal source of economy is from savings in air-conditioning. Other savings are blinds or drapes, a more economical curtain wall (materials can be chosen for economy rather than aesthetics), and possibly window washing equipment. Although it is difficult to assign values to them, there are other advantages which accrue with its use. The screen functions as a weather break—this from the author's personal observation of many projects under his immediate direction. Not one of the buildings observed suffered a curtain-wall leak, although the point should be made that the tallest of these is four-stories.

From the comfort standpoint, radiation and drafts are absent in the totally screened wall. From a design viewpoint, the architect has an opportunity to control scale, which has long been absent in the small module of the curtain wall.

Since cost of the screen versus air conditioning savings will apparently remain the principal criterion of judgment, all factors in solar screen design must be kept at optimum cost.

Screen design factors

Architectural design of the screen is both functional and aesthetic. Although guided by aesthetic considerations, the functional solution is a direct one involving latitude, orientation and the degree of shading desired for an established period of time during the year. While graphic investigations of sun azimuths and altitudes are the normal procedure, the method is arduous and tends to stifle design exploration.

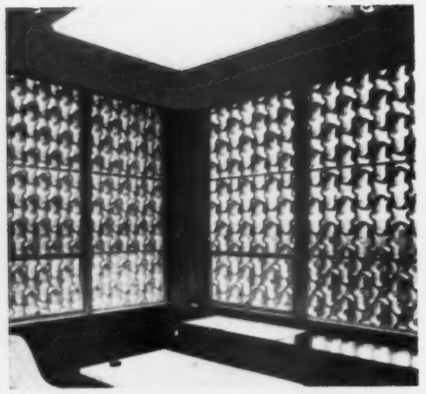
The use of models and a device to simulate the sun has been found to be far superior. Curtis and Davis of New Orleans, with whom the author is associated, has developed such a device called the *Helidon (fig. 4)*. This consists of a combination tilting and rotating table on which one-half scale models are mounted. Separate horizontal and vertical protractors mounted on the table permit setting the model at a given azimuth and altitude in relation to a fixed light source (projector). Observations are then possible on the rear of the model to determine its suitability, and corrections are made on the model while in position.

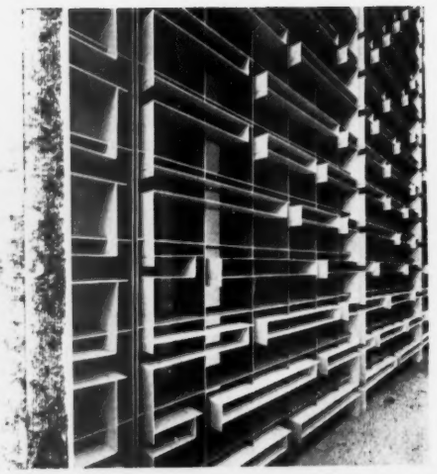
While function is a fixed factor, there are other design considerations that have a marked effect on the cost, and these can be varied. They include type of metal selected, color and finish desired, size of the panels, engineering considerations of wind loading, expansion and contraction and jointing, as well as fabrication and erection. All these must be investigated for the particular metal selected. This is important. For optimum costs to be reached, the type of metal must be selected *first*. A design conceived and engineered for steel cannot honestly be transposed to aluminum or vice versa, as is so often found in alternative bidding. The peculiar properties and working characteristics of each metal must be respected and, in fact, exploited to achieve low costs. If economy alone guides the selection of metal, then it is wise to investigate the type of metal working facilities available in the area of the building, in the interest of lower fabrication and shipping costs.

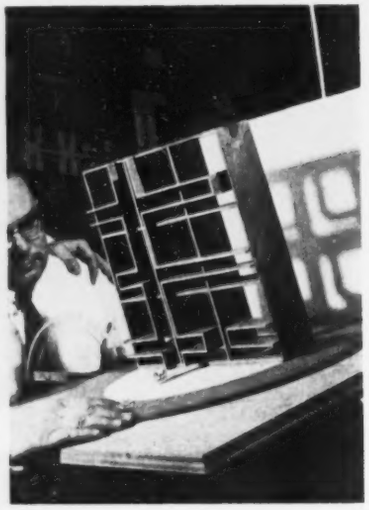
Respect for metal's properties

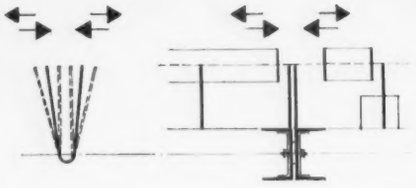
Having selected the type of metal, the designer should familiarize himself with the properties and working characteristics of the material. The properties of metal change with working, be it stamping, drawing, extruding or welding. The designer should utilize such knowledge: if the metal lends itself more economically to mechanical jointing, then the method should be made a part of the design, so as to avoid unnecessary expense in attempts at concealment. The basic cost in any design in metal is the number of pounds of metal used, so the strength of the material must be utilized to its maximum capacity, if economy is to be achieved.

These may seem elementary statements, but examples abound of designs which ignore these basic considerations. This results from the failure of









1	2	3
4	5	6

1 The small size of aperture of early designs using standard masonry units led to design of special units for solar screening, as shown in this exterior view. 2 The same design as seen from inside. Even here it was not always possible to achieve total control consistent with the desired degree of vision. 3 Partial view of an aluminum screen suspended about 4' in front of glass; screen acts as shield against sun penetration after 9:30 a.m. (New Orleans Public Library.) Total shielding during air-conditioning season allowed engineers to discount solar load entirely, except for radiation. 4 The Helidon is a device consisting of a combination tilting-and-rotating table, on which one-half scale models are mounted. Observations are made on rear of model, and corrections are made while it is in position. 5 A "tongs" type of connector used to handle problems of e pansion and contraction. Adjacent panel edges are fixed t each arm of tong. Movement is taken up by spring action i the tongs. 6 That a solar screen need not obstruct visio is shown by photograph. Normal 60° cone of vision take in only a portion at a time; focus is on objects beyon screen. (Photos 1-4 by Frank L. Miller, no. 6 by author

architects to take advantage of the consulting services offered by the metal industry, which is anxious that its materials be used properly and efficiently. The fabricator should also be a part of the design team, for he can advise on the size of the panels, which is a function of "jig size" and "tank size" for cleaning and finishing. Aid involving equipment, shipping and erection can also be rendered. None of these factors can be ignored if designer hopes to achieve a screen within established economic limitations.

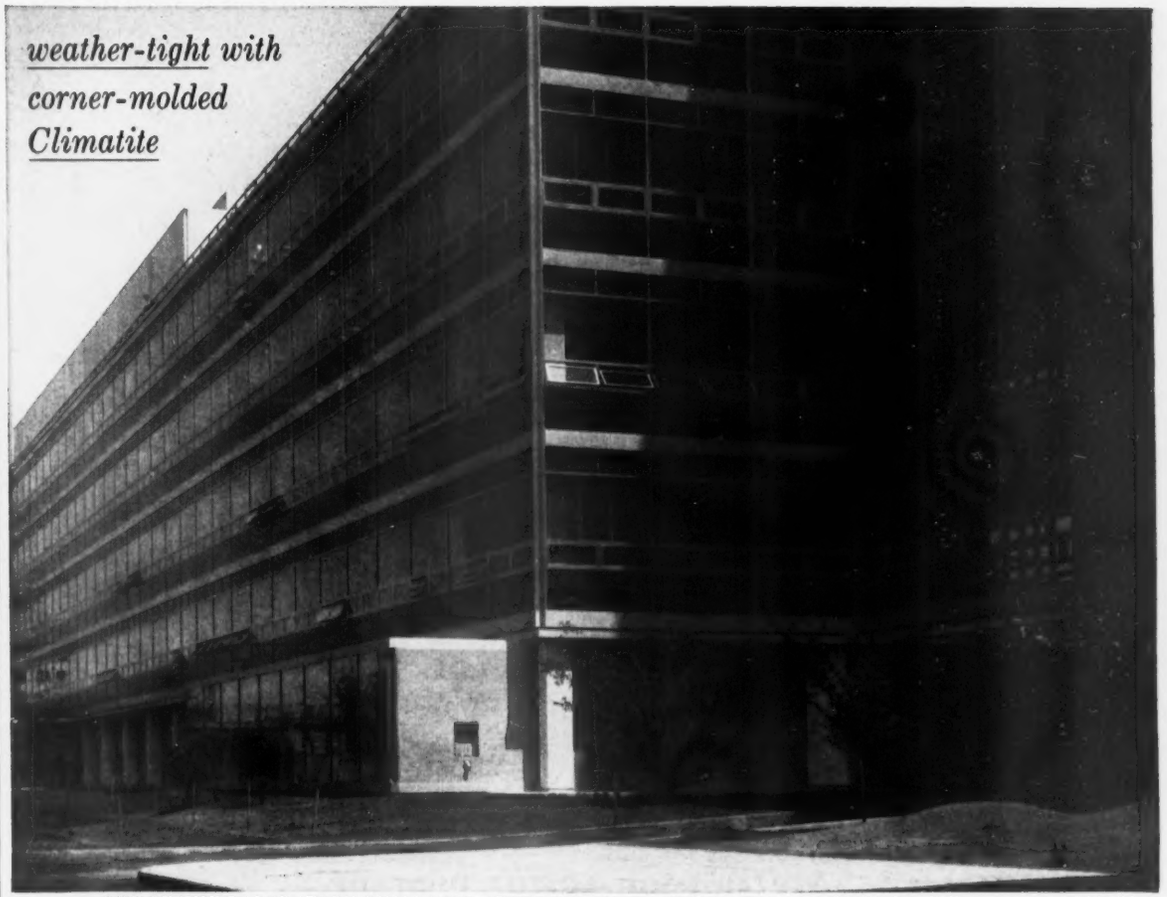
Elements of engineering

The exterior solar screen may be an integral part of the curtain wall, or it may be independently supported from the structural frame. In either case, it must be rigorously investigated for wind loading. Depending on depth and density of the screen, it is possible to develop a load component in the *plane* of the screen for wind at an angle that exceeds a loading *normal* to the plane of the screen, assuming the screen to be solid. Because of possible vibration and deflections of the curtain wall mullions, the system of support independent from the structure seems best. This does require a system of either horizontal girts or vertical mullions separate from the curtain wall, and, if the curtain-wall mullions could be used to transfer the screen windloads, a saving would be affected.

As in any structural system, jointing is the weakest link and should be carefully examined. Bolting is generally the most economical method of field erection, so that care must be exercised to avoid reducing sections below minimums. Provision for expansion and contraction is an integral part of the structural design and complicates the structural connections. Assuming a panelization of the screen with joints (expressed vertically), there appear to be two practical methods available. The first is to fix one edge of the panel and allow the other to slip at its connections; the second is to employ a "tongs" type of connector with adjacent panel edges fixed to each arm of the tong. Movement is taken by spring action in the tongs *(fig. 5)*.

The latter connection was satisfactorily employed on the New Orleans Public Library. Again, assuming vertical structural mullions, a sleeved type of slip joint (capable of taking bending moment) appears to be the simplest mullion connection where appearance is an important factor.

Here, too, before one proceeds with



ONE OF THE LABORATORY BUILDINGS AT M.I.T. Architects: Skidmore, Owings & Merrill; Geo. Fuller, contractor and builder.

FIRESTONE CLIMATITE

PANEL GASKETS SEAL OUT WATER AND WEATHER FOR A STRUCTURAL LIFETIME

This striking M.I.T. laboratory building in Cambridge, Mass., features a weather-impregnable sealant for curtain walls—*Firestone Climatite Panel Gaskets.*

These are one-piece channel gaskets *molded to fit* at all corners without buckling, sagging or cracking. Their custom-made compounds are *precisely* formulated for maximum resistance to area climatic conditions. Result: lasting weather tightness—so much so that the gaskets unfailingly withstand repeated 140-m.p.h. water/wind machine tests without a leak.

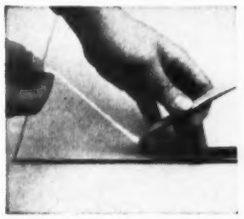
Another *Climatite* product much in demand is *Climatite* adhesive strip-seal, a perennial best seller for its stout protection against the elements.

Use the coupon or call today for complete details on this sound building investment for your clients and for yourself.

Copyright 1961, The Firestone Tire & Rubber Company

Firestone

RUBBER & LATEX PRODUCTS CO.



CLIMATITE adhesive strip-seal is a builders' favorite for its ease of installation and exceptional weather resistance.

CLIMATITE channel gasket molded-to-fit corners eliminate buckling, sagging and cracking. A lasting seal at every edge.

FIRESTONE RUBBER & LATEX PRODUCTS CO., FALL RIVER, MASSACHUSETTS

Gentlemen:

CLIMATITE'S unique advantages interest us. ☐ Please send detailed information, including cost. ☐ Please have your representative call and demonstrate CLIMATITE, with no obligation to us.

NAME _____

FIRM _____

ADDRESS _____

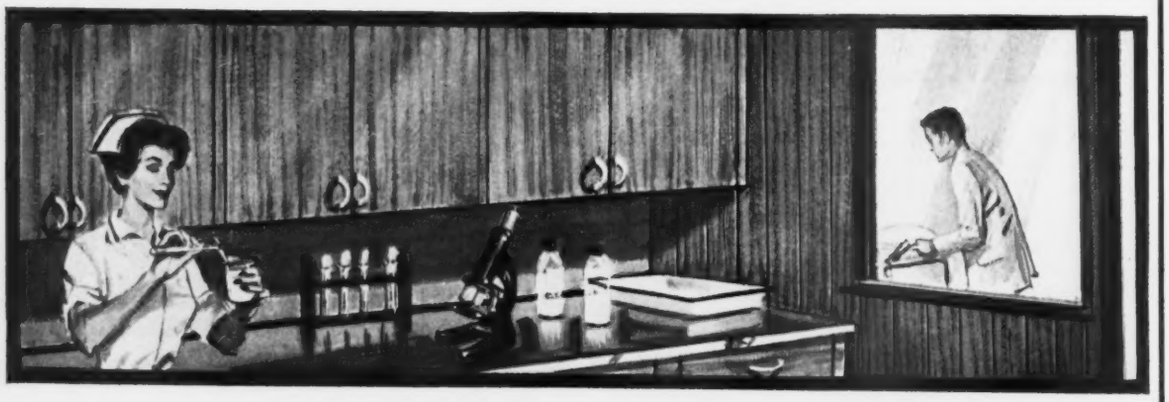
CITY _____ ZONE _____ STATE _____

FBP-73(1)

Circle 107 for further information

WHERE YOU WANT A BEAUTIFUL, DANISH-TYPE OIL FINISH...

OR A FINISH THAT LASTS AS LONG AS THE SURFACE OF THE WOOD...



OR BOTH...SPECIFY WELDWOOD® DEEP FINISH FIRZITE!

Weldwood's new Deep Finish Firzite® won't wear off easily like ordinary surface finishes. Nor scratch off. It's a penetrating sealer-finish that sinks deep into the wood fibers, and lasts as long as the surface of the wood itself. Just brush on, wipe off. It produces a beautiful Danish-type "hand-rubbed" effect without laborious rubbing. More: Deep Finish Firzite seals the surface like its famous predecessor, Clear Firzite. Helps prevent grain raising or checking on paint work, and unsightly "wild grain" when staining.

FREE WOOD SAMPLES! See the results obtained with new Deep Finish Firzite for yourself. Write for free wood samples to: United States Plywood, Dept. AEN 10-61, 55 West 44th Street, New York 36, N. Y.

WELDWOOD
WOOD FINISHES

Products of United States Plywood

Circle 108 for further information

structural design, the metal industry should be consulted for the particular metal selected. The alloys available are numerous and, of course, the properties and methods of working the metal vary with each alloy.

Fire, safety and cleaning

The building designed with a continuous solar screen is analogous to the window-less building from the standpoint of fire fighting access, and until special code provisions are formulated, it appears safe to follow these requirements. For the occupant, the screened building offers an advantage if a permanent catwalk is installed for window washing, since it affords a safe means of exterior horizontal movement should interior corridors become impassable. 3′-0″ clear is considered minimum.

Another possible cost factor which can be balanced against the cost of the solar screen is glass-washing equipment. The structural system necessary to support the screen provides a natural scaffold for window washing. The horizontal girt at each floor can be designed to take a horizontally moving platform or a permanent grating may be installed as a catwalk. The screen is a natural safety barrier. It is, of course, necessary to have reasonable working space between the wall and the screen.

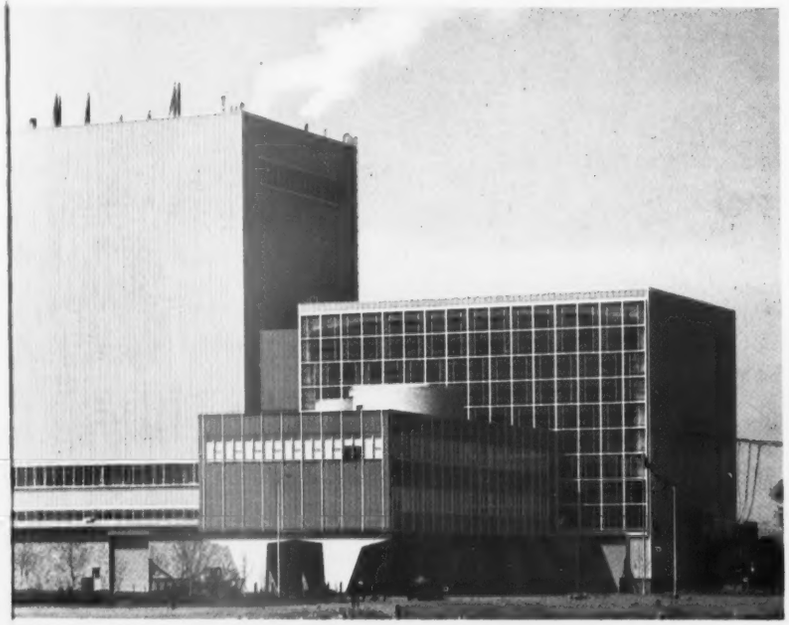
Looking out

The author had some reservations on the New Orleans Public Library, the first project to utilize the metal solar screen extensively. The large open interior spaces permitted viewing (from one point) three sides of the building composed of screen and glass from floor to ceiling. Cause for concern proved to be unfounded, since the normal 60° cone of vision intercepts only a portion at any one time. When viewing through the screen, vision focuses on the object beyond the screen, resulting in the screen itself being of secondary importance in the field of vision *(fig. 6)*.

Combining a metal solar screen with a curtain wall of glare-reducing glass offers an unchallenged solution in comfort and effective architectural use of glass. If carefully designed to achieve the proper economy, it should add very little, if any, to the normal cost of the unscreened air-conditioned building. Under favorable conditions, it may even afford a saving. As a new design element, it gives the architect an opportunity to design a wall in depth, relieving a certain flatness characteristic of many buildings in recent years.

Circle 109 for further information about H. H. ROBERTSON→

BLANDIN PAPER COMPANY, Grand Rapids, Minn., Ellerbe and Co., Designers.



CONNECTICUT LIGHT AND POWER CO., Norwalk, Conn., United Engineers & Constructors, Engineers and Contractor; Kahn & Jacobs, Consulting Architects.

THE HECHT CO., Hyattsville, Md., Lathrop Douglas, Architect.

PEPSI-COLA BOTTLING WORKS, Quincy, Ill., Hafner & Stranckmeyer, Architects & Engineers.

for colorful walls

that endure . . . specify

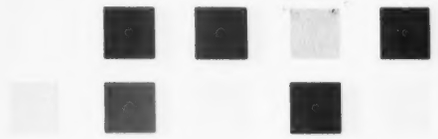
ROBERTSON

PORCELAIN ON ALUMINUM

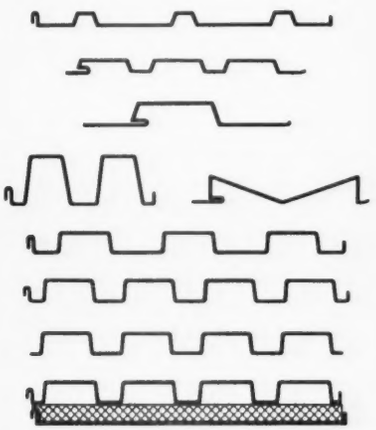
History attests to the fact that the use of porcelain enamel on metal was well known to ancient man. But only in recent years has it come into its own as a practical building material of beauty and permanence for the exterior of modern structures. Now, with a superior base of aluminum, Robertson offers wall panels, spandrels and trim in a wide choice of shapes, textures and fadeproof colors—impervious to the effects of time and weather. Use the coupon to write for literature.

WIDE CHOICE OF COLORS

These are just a few of the almost unlimited number of colors to choose from. Finish is available in three degrees of gloss.



WIDE CHOICE OF SHAPES



· · · USE THIS COUPON TO GET COMPLETE DATA · ·

H. H. ROBERTSON COMPANY

2400 Farmers Bank Bldg., Pittsburgh 22, Pa.

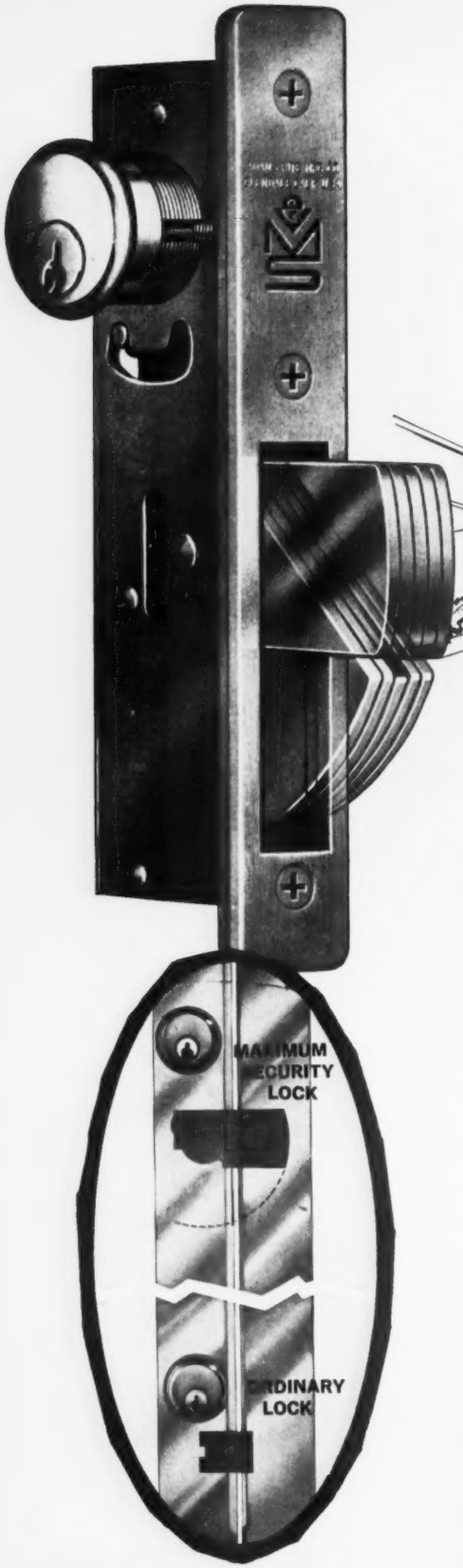
In England—Robertson Thain Ltd., Ellesmere Port, Cheshire

In Canada—Robertson-Irwin Ltd., Hamilton, Ontario
Edmonton, Alberta

NAME_____ TITLE_____

COMPANY_____

ADDRESS_____



only this lock can provide MAXIMUM SECURITY

FOR NARROW-STILE GLASS DOORS

CHECK YOUR SPECIFICATIONS NOW. SEE IF YOU HAVE PROVIDED ADEQUATE BUILDING SECURITY.

AN ORDINARY LOCK, when adapted to a modern glass door, has a very short bolt. Since the conventional sliding bolt is thrown and retracted horizontally, it cannot be longer than the width of the narrow stile. By slightly prying the door away from its jamb, enterprising burglars can slip this short bolt out of its strike and the door will spring open.

THE ADAMS RITE MAXIMUM SECURITY lock, however, is designed specifically for narrow-stile doors. It uses an exclusive, patented, swinging action that permits a much longer bolt than the ordinary lock. The bolt is housed vertically in its retracted position and swings upward into its horizontal MAXIMUM SECURITY position. The MS bolt is actually a bar of laminated steel, three inches long. As much of this huge bolt is retained within the stile as is projected into the jamb, making forced entry impossible without complete destruction of the door channel.

SPECIFY THE ADAMS RITE MS LOCK for all narrow-stile, swinging glass doors. Whether it's a single door or a pair of doors, ADAMS RITE has an MS lock designed especially to provide MAXIMUM SECURITY and long range, trouble-free operation.

WRITE TODAY for an illustrated brochure that explains the need for MAXIMUM SECURITY

SEE OUR CATALOG IN SWEET'S OR WRITE FOR COPY

ADAMS RITE
MANUFACTURING COMPANY
540 West Chevy Chase Drive, Glendale 4, California

Circle 110 for further information

postscript on sealants

A building industry forum held earlier this year in Chicago dealt with polysulfide sealants and modern building sealing standards.

The panel discussion was followed by a question and answer period, and since more questions were asked than there was time to answer them, the sponsors responded by mail to those who had submitted unanswered questions. A/E NEWS *is pleased to be able to present the complete series of questions and answers to its readers.*

The forum was sponsored by Thiokol Chemical Corporation in cooperation with the American Standards Association.

Q *What causes polysulfide-base caulking, even when properly mixed, to fail to set?*

A There are several possible explanations for this phenomenon:

a Continuous ambient temperatures below 45° F could probably cause a 1 to 2 month delay in cure.

b A compound with excessive retarder in combination with low temperatures could cause a similar delay. Excessive retarder would prevent adhesion or cause a failure in adhesion.

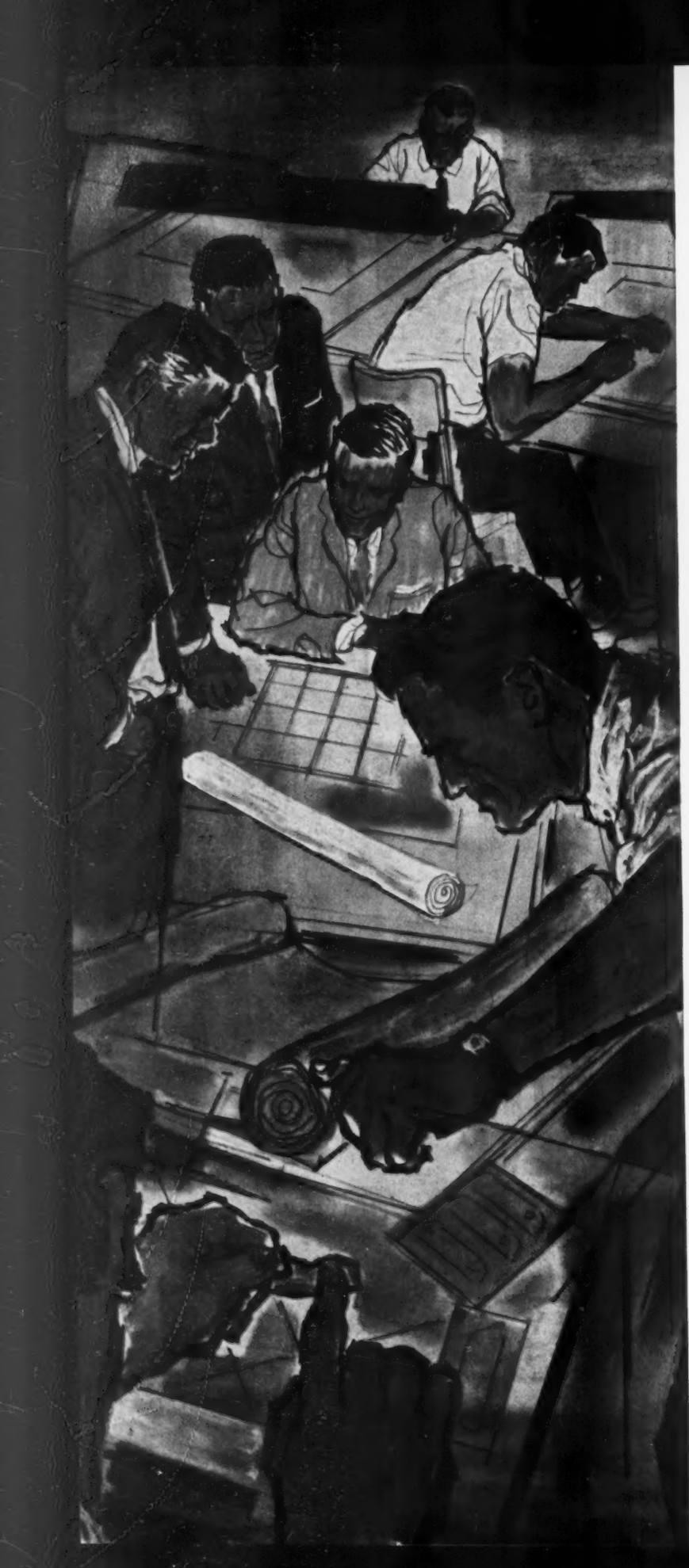
c The most common failing of this type results from improper incorporation of the accelerator, or an insufficient amount of it. This can be easily checked by taking sealant from the joint and mixing it with additional accelerator. This will usually cure, and in doing so, will demonstrate that failure to cure was caused by insufficient accelerator in the first place.

Q *There is a wide variation in polysulfide-base sealant prices. Is there any difference in the quality of workability of the material regardless of manufacturer, price or size of package?*

A There are differences in quality of materials from various polysulfide sealant manufacturers just as there are differences in price. All sealants which are offered for sale to specifiers should meet the "American Standard Specification for Polysulfide-Base Sealing Compounds for the Building Trade" before they are considered for use. There is, indeed, a variety of package sizes. For this reason it is advisable that once a minimum criterion based on the ASA specification has been established, material be purchased on a pound rather than a volume basis.

Q *Does the American Standards Association establish two different sets of standards—one set for a two-part mix polysulfide-base compound and one set for a one-part mix?*

A The ASA specification is based on a two-part polysulfide system. The ASA may, at a later date, issue a specification for one-part polysulfide-base sealants. At present, there is a one-part system which is said to meet the ASA specification except for set and



What's new in drafting materials? Get it firsthand from Dietzgen

Today's engineering and production achievements are miracles of teamwork. The talents of scores, hundreds and even thousands of engineers, architects, technicians, draftsmen, and specialists are coordinated through rapid and accurate interchange of ideas. Technical drawings are the primary communication media of this progress and their preparation represents approximately 70% of the total engineering costs.

Dietzgen's long experience and continuing research plays an important part in providing new techniques, materials, and equipment to boost drafting room efficiencies. For example: Dietzgen "no-print" gridded drafting media promote faster, more accurate sketch work and eliminate many tedious re-drawing operations. New Dietzgen sensitized drafting media have pioneered such time-saving cost-cutting techniques as template drafting, registration drafting, and new methods for retrieving drawings which have lost their line density.

No organization can afford to ignore the advantages and economies these new drafting media provide. Now is the time to try, test and prove the value of Dietzgen drafting materials in your engineering-drafting departments.

Write today for the new Drafting Media brochure. This 28-page booklet not only presents what's new in drafting materials, it also explains and illustrates their many uses. Address your request on your company letterhead and ask for Publication MKTG3-K-39.

EUGENE DIETZGEN CO. Chicago 14, Illinois.

DIETZGEN

EVERYTHING FOR DRAFTING SURVEYING & PRINTMAKING

PRINCIPAL OFFICES:
CHICAGO
NEW YORK
NEW ORLEANS
SAN FRANCISCO
LOS ANGELES
CALGARY

cure times. The present one-part system requires three to four weeks before complete cure, while the ASA specification requires testing within a seven day period.

Q *How can the user be assured of receiving a material alleged to meet the American Standards Association specification?*

A The supplier may be asked for a letter stating that it does meet the specifications. This is strictly in accordance with basic ASA policy. All standards published by the ASA contain the following as part of the prefactor statement:

"Producers of goods made in conformity with an American Standard are encouraged to state on their own responsibility in advertising, promotion material, or on tags or labels, that the goods are produced in conformity with particular American Standards."

This doesn't necessarily guarantee performance, but an American Standard, by virtue of the "consensus principle" behind it, carries inherently great strength and tends to discourage deviation.

Q *How do the cured performance properties of one part polysulfide systems compare with the two part systems?*

A Experience has shown the recently introduced one-part sealant to be a good quality material. However it depends on moisture from the air to cure and this may take from one to three weeks to complete. Therefore, if movement occurs in joints before the material has converted to a rubber there may be trouble because the material may be extruded out of the joints. If this limitation is taken into account and if the material is used where movement is not excessive, it should prove perfectly satisfactory.

Q *How elastic is polysulfide sealant? What is its reaction to expansion and retraction of adjacent materials? What is the life of the material?*

A Polysulfide base sealants are rubbery in that, when cured, they do have a range of modulus values when under extension. Furthermore, when the sealants are applied in expansion joints, they will follow the movement of the adjacent materials. The sealant also exhibits recovery as with most elastomeric polymers. Properly compounded and properly installed polysulfide sealants should perform satisfactorily under average outdoor conditions for approximately 20 years.

Q *What are the optimum conditions*

for combination usage of a channel gasket and flow-in sealant?

A The following are considered essential:

Follow prescribed application procedures. Be sure cross section of sealant and gasket is not less than ⅛". Be sure sealing surface to which the sealant must adhere is not less than ¼" wide. Make the assembly at temperature above 40° F and be sure all sealing surfaces are clean.

Effects of moisture

Q *What limitations are there to applying the sealant to a wet masonry wall?*

A Polysulfide sealants can be applied to a wet surface as long as the water film is removed from the surface of the concrete, stone or brick. This becomes the limiting factor for good adhesion.

Q *With reference to concrete joint sealing, why is it stipulated in some polysulfide sealant specifications that the concrete be cured for 28 days before sealant is installed?*

A To insure complete dryness of the concrete. More water is put into concrete than needed to hydrate the cement and it takes some time for this process to complete itself and for the excess water to evaporate. Moisture should be out of the concrete before sealant is applied to prevent adhesion failure. Another point of view is that as long as the concrete is reasonably dry on the surface it can be primed and sealant applied. The 28 day period is more for components for standards testing.

Q *How does using polysulfide-base sealant under water affect the life and properties of the material?*

A Polysulfide-base sealants can be used under water. The sealant is not adversely affected, but adhesion may be. It is recommended that bond coats, curing materials or inhibitors and other materials that could in any way hamper adhesion to concrete be considered a source of difficulty.

Various primers can overcome some of these problems. In addition to enhancing adhesion, a primer will keep water from the interface and, consequently, improve adhesive bond.

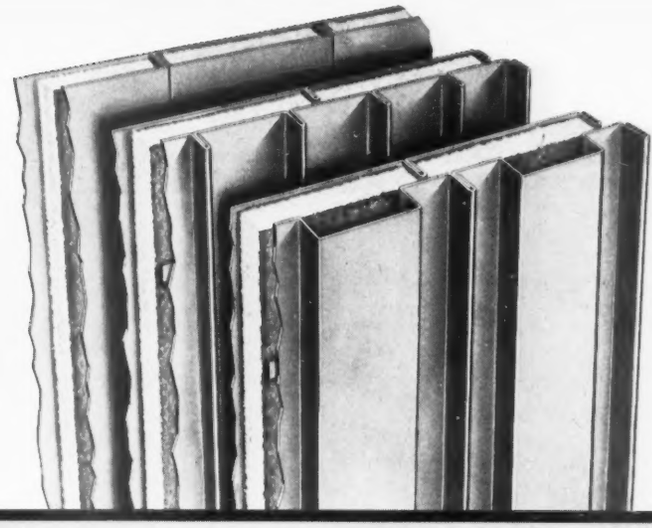
Q *Can polysulfide polymers be mixed with epoxies for any special uses?*

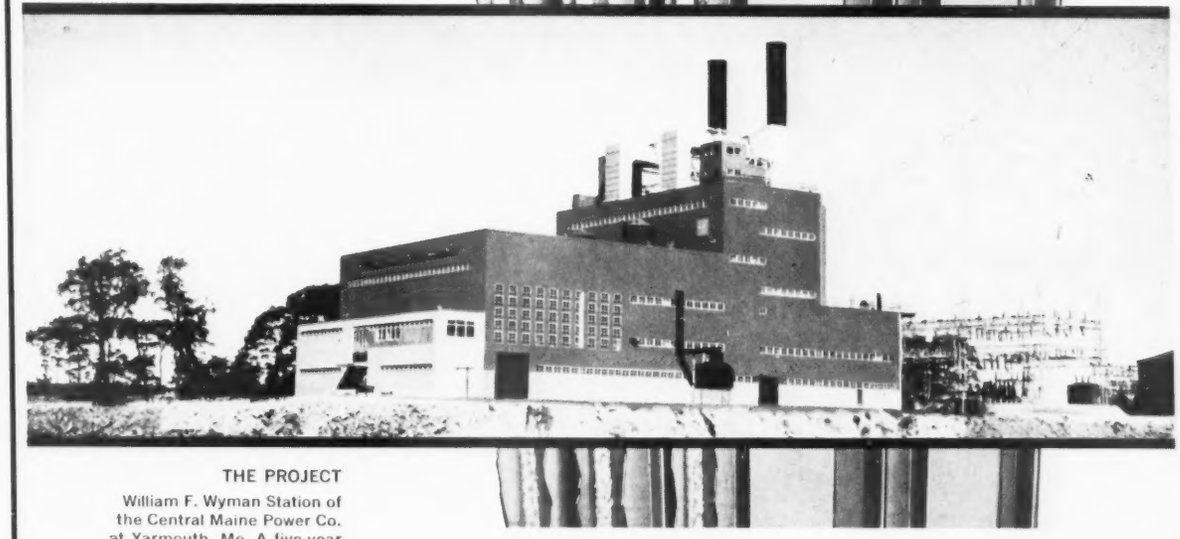
A There are many uses for such a combination, as, for example, in sealing concrete against infiltration of salts.

Miscellaneous problems

Q *What causes the formation of large*

NOT NEW
...JUST
PROVEN
MAHON
CURTAIN
WALL





THE PROJECT

William F. Wyman Station of the Central Maine Power Co. at Yarmouth, Me. A five-year old project that retains its bright-as-tomorrow good looks. Engineers: Jackson & Moreland, Inc. Gen'l Contractor: Sanders Const. Corp.

THE SECTION

Mahon's field-constructed (3-6-3) fluted pattern in green baked-enamel 16-gage galvanized steel with Fiberglas insulation (shown in foreground of three-section photograph). Erection by Mahon.

MAHON BUILDING PRODUCTS

Aluminum or Steel Curtain Wall • Rolling Steel Doors (Standard or Underwriters' labeled) • Fire Walls (Underwriters' rated) • M-Floors (Steel Cellular Sub-Floors) • Long Span M-Deck (Cellular or Open Beam) • Steel Roof Deck • Acoustical and Troffer Forms • Acoustical Metal Walls, Partitions, and Roof Deck

CONSTRUCTION SERVICES

Structural Steel—Fabrication and Erection • Steel Fabrication—Weldments • Geodesic Domes—Fabrication and Erection

Mahon Insulated-Metal Walls form a highly efficient wall system that is a far cry from flimsy 'low cost wall wraps'. When structural function, clean good looks, ease of erection and minimum maintenance are wall consideration, investigate Mahon. Available in various metals, diverse sections, different finishes, and a rainbow of colors to offer unlimited architectural-design freedom. What's more, Mahon Insulated-Metal Walls are quality-made, corrosion and fire-resistant, invisibly joined, easily sealed and are kept clean by rain showers. They mean true economy and lasting advantages. Write for informative Wall Catalog W-61, see Sweet's Files, or contact your local Mahon Building Products representative.

THE R. C. MAHON COMPANY *DETROIT 34, MICHIGAN*

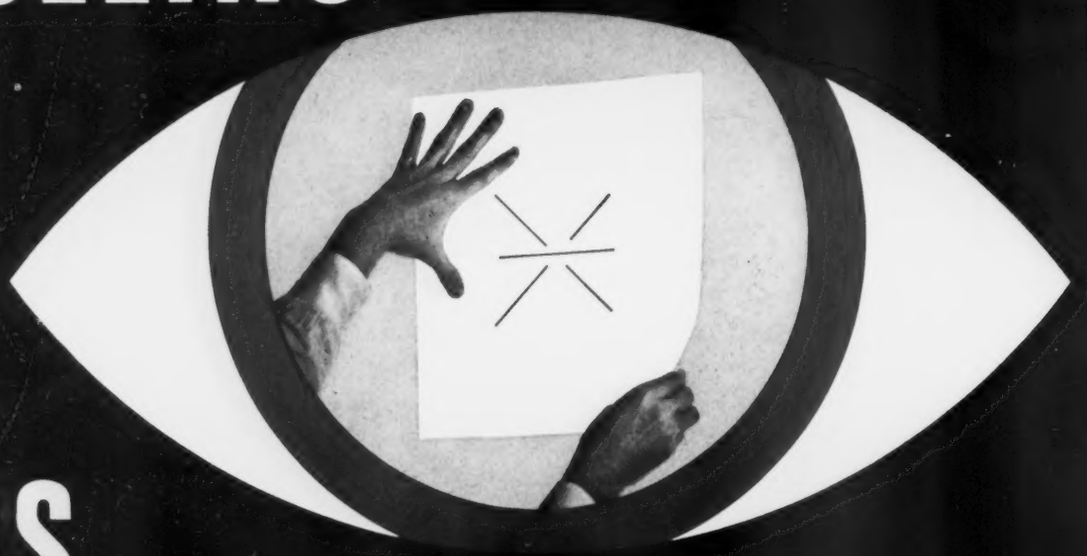
MANUFACTURING PLANTS—
Detroit, Michigan and Torrance, California
SALES-ENGINEERING OFFICES—
Detroit, New York, Chicago, Cleveland, San Francisco and Torrance, Calif., Seattle, Wash. and E. Orange, N. J.
REPRESENTATIVES IN ALL PRINCIPAL CITIES.

SPEEDING AMERICAN CONSTRUCTION WITH METAL BUILDING PRODUCTS, FABRICATED EQUIPMENT AND ERECTION SERVICES.

MAHON

Circle 112 for further information

SEEING IS BELIEVING!



EARPRI

CLEARPRINT PAPER CO. AEN-1560
1482 - 67th St., Emeryville, Calif.

☐ Send me Clearprint Fade-Out samples, with prices, for the following uses:_____

Name_____

Firm_____

Address_____

City_____ Zone___ State_____

s

air bubbles in the joint and how may they be repaired?

A A frequent cause is air bubbles in the cartridge. The only remedy is to cut out the old and put in new sealant. This is expensive. In actual field practice, one would pierce the air bubble, retool the bead, and if necessary apply another bead. This is possible because the polysulfide sealant "heals" to itself very well.

Q *It is said that a polysulfide-base sealant cannot be used in thicknesses under ¼". Is this correct?*

A A ¼" contact on all facing surfaces is recommended in order to get sufficient surface contact. There are cases where less has been used. Reduction of the bonding surface increases risk of bond failure. Relationship of width to depth should vary between 1:1 and 1:2. If one dimension must be made larger than the other, it should be width. This will prevent adverse effects during joint movement.

Q *Does void-filling material used with a polysulfide-base caulking have to be compatible?*

A Void filler should not be of an oil-base asphaltic or bituminous type because of the possibility of contaminating the surface of the joint. Fillers such as urethane foam, styrofoam, butyl rubber and other rubbery materials are "compatible" with polysulfide-base sealants.

Q *How long can one safely store frozen cartridges? Do they lose any of their physical properties? After long periods of storing how is pot life affected?*

A Normally, two-part polysulfide base sealants have a shelf life of six-months. Once they are frozen and placed in the cartridge, they can be stored for approximately two months. This span of time should not be exceeded. Cured performance properties are the same as with freshly mixed materials. Experiments in the laboratory at −40°F showed that the sealant even after 3 months, was unchanged.

Q *How is polysulfide best removed from various surfaces when repairs are required? For example, from steel or aluminum glazing openings when replacing broken glass?*

A It is difficult to remove uncured polysulfide except by using *MEK* or *Toluene*. If the sealant has set, it is best cut out with a knife. If the surface is then properly cleaned, sealant may be re-applied without ill effects.

Q *Can primers be applied in the fac-*

(Continued on page 25)

Circle 113 for further information

Circle 114 for further information about MOSAIC TILE →

THE MOSAIC TILE COMPANY CURTAIN WALL PANELS IN CERAMIC TILE

PLATE NO. 712

A.I.A. FILE No. 17-A

Curtain Walls of Distinction in MOSAIC® *Ceramic Tile*

THE MOSAIC TILE COMPANY CURTAIN WALL PANELS IN CERAMIC TILE

IN CURTAIN WALL ARCHITECTURE . . . *Ceramic Tile Stands Out!*

Of all practical surfaces for curtain wall panels, this one contributes the most.

Rich tile patterns of distinctive color and texture speak well of the buildings they enclose and of the hand of the designer behind them. And, never a thought of maintenance or repair.

Much is happening in this field. New cores, with "K" values of .125, compression deflection of .027 under wind load of 40 lbs., and high compressive and shear values in excess of most design requirements, provide improved panel versatility and function. Neoprene and epoxy adhesives have kept pace with progress in core and fascia materials. Highly qualified panel specialists can shop-assemble panels into system manufacturers' frames and deliver fine components to the job.

Mosaic ceramic tile patterns, give the designer wide latitude in color, texture and *scale*. Byzantile patterns, particularly, might well have been created just for this purpose. Study the "Mosaic Workbook for Architects" in Sweets, call in your Mosaic Tile Representative or write The Mosaic Tile Company, P. O. Box 112, Zanesville, Ohio.

THE MOSAIC TILE COMPANY *Member: Tile Council of America, Inc. and The Producers' Council, Inc.*

OFFICES, SERVICE CENTERS: Atlanta, Baltimore, Beverly Hills, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Corona, Dallas, Denver, Detroit, El Monte, El Segundo, Fresno, Greensboro, E. Hartford, Hempstead, Houston, Ironton, Jackson, Jacksonville, Kansas City, Little Rock, Matawan, Memphis, Miami, Milford, Milwaukee, Minneapolis, New Orleans, New York, Oklahoma City, Philadelphia, Portland, Salt Lake City, San Antonio, San Bernardino, San Diego, San Francisco, Santa Clara, Seattle, Sepulveda, Tampa, Washington, D.C., Zanesville. REPRESENTATIVES: Birmingham, Fair Haven, Oklahoma City, Pittsburgh, Spokane, St. Louis. DISTRIBUTORS: Albuquerque, Hato Rey, P.R., Honolulu, St. Louis, Quebec. PLANTS: Corona and El Segundo, Calif., Jackson, Miss., Little Rock, Ark., Matawan, N.J., Ironton and Zanesville, Ohio.

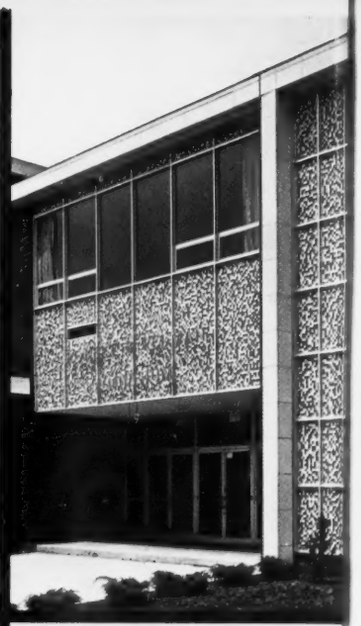
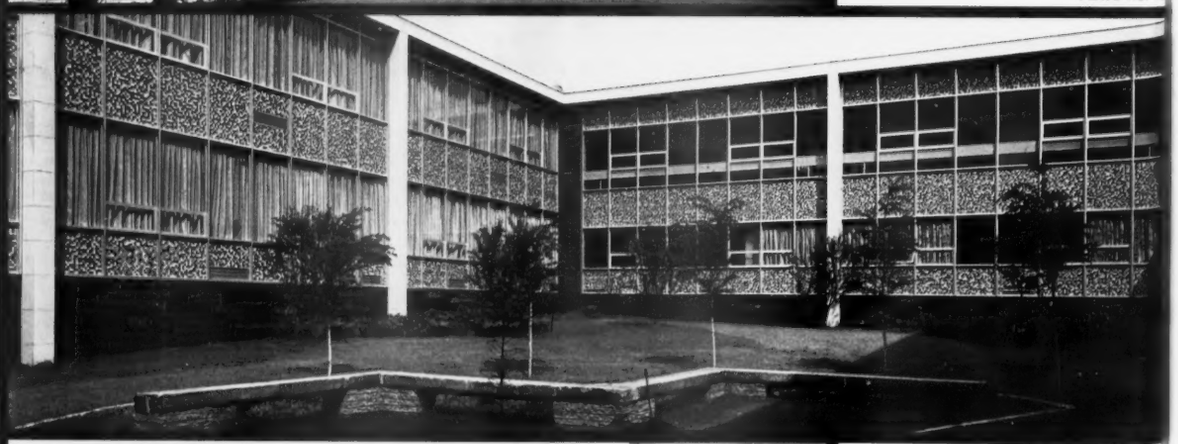


PLATE NO. 716-A (ALSO NO. 716-B)
Architect: Emil Schmidlin.
Mosaic Medley Pattern No. 1778 in unglazed ceramic mosaics.

PLATE NO. 715
Architect: William E. Lehman.
Panel Mfr.: Structural Panel Corporation-
Mosaic Medley Pattern No. 3015 in unglazed ceramic mosaics.

PLATE NO. 71



A.I.A. FILE No. 17-A

PLATE NO. 712
Architects: Paul Sternbach, Alton Rheaume.
Panel Mfr.: Structural Panel Corporation.
Mosaic Pattern in glazed Faientex.

MOSAIC®

POSTSCRIPT ON SEALANTS

(*Continued from page 22*)

tory and sealant applied in the field?
A We (the sponsors) know of no instance where primers are applied in the plant to be sealed later in the field. Many primers have to be applied prior to application of the sealant. Furthermore, the possibility of contamination of the primed surface always exists under construction conditions. Priming in advance of sealant application under such conditions would thus prove ineffective.

Q *Are joints sealed with polysulfide-base compounds scrubbable? Will they retain field dirt?*
A Polysulfide sealants, after cure, may be cleaned by using normal detergent solutions. Even lacquer removers will not affect the sealant if contact time is kept at a minimum.

Q *Will a polysulfide base sealant bond to silicone-treated surfaces?*
A Recent laboratory experiments with brick and stone showed that adhesion is possible provided that a primer is used. Furthermore, the particular sealant to be used should be checked against the stone in question.

The amount of silicone or protective material on the surface can vary considerably; however, very little was found to be used and in such cases it should not offer any particular problem.

Sealants in color

Q *How well do colored sealants weather? Do they fade?*
A There is no relationship between color and performance. A sealant should be selected regardless of color if it meets the requirements of the ASA specification for polysulfide-base sealing compounds mentioned earlier. As with all other colored materials, the degree of fading will depend on the primary color selected.

Q *Many designers object to the black color. What other colors are available?*
A Sealants are available in a wide variety of colors and several processing firms offer color charts to interested architects and builders.

Q *What effect does ultraviolet have on today's polysulfides compared to those made two years ago?*
A Ultraviolet was formerly a problem with some of the polysulfide sealants. However, most manufacturers have solved it. Testing procedures in the ASA specification require that the sealant be subjected to an ultraviolet source to determine its resistance.

Circle 115 for further information →
←Circle 114 for further information about MOSAIC TILE

HOWARD JOHNSON MOTOR LODGE, PENSACOLA, FLA.
Architect: H. A. MacEwen, Miami, Fla.
Contractor: Shapiro Construction Co., Valdosta, Ga.

NO VACANCY

NO VACANCY

FLINTKOTE

ROOF DECKS

are featured in the new Howard Johnson Motor Lodge, Pensacola, Florida

The living is easy when you stop at this Howard Johnson Motel . . . *Insulrock easy!*

Overhead the roof deck helps insulate against Florida's big sun, makes possible interior light reflectance of 60-70%, and absorbs noise like a sponge drinks water.

Neither rot nor termites are a problem with INSULROCK'S portland cement bonded, chemically treated wood fibers. Here's strength and beauty in full measure for years to come—all in one economical, lightweight roof deck.

Anywhere under the sun, rain, or snow, build your best roof decks with INSULROCK—*for beauty that stands up through the years.*

THE FLINTKOTE COMPANY
INSULROCK DIVISION

Executive Offices: New York, N. Y.
General Sales Office: Richmond, Virginia
Plants: North Judson, Indiana; Richmond, Virginia
District Sales Offices: Chicago, Ill.; Cleveland, Ohio; Dallas, Texas; Greensboro, N. C.; Los Angeles, Calif.; New York, N. Y.
Member of the Structural Wood Fiber Products Association
*A trademark of the Flintkote Company

FLINTKOTE®

Manufacturers of America's Broadest Line of Building Materials

On choosing a precast wall

FIGURE 1

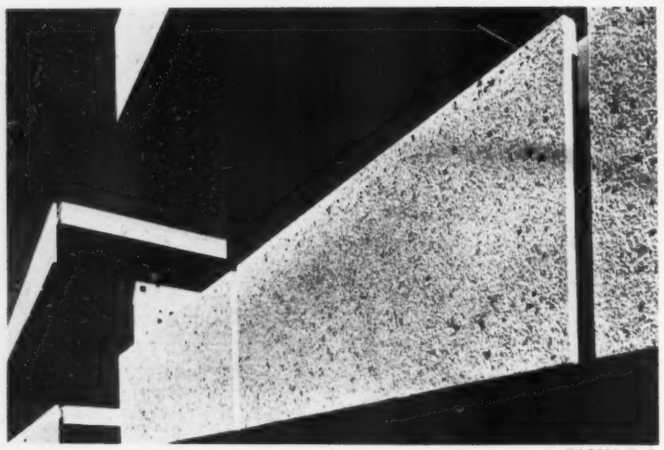


FIGURE 2

Until the last few years metal was the dominant element of curtain-wall design. Recently, however, other materials have been added to the available arsenal of building facing materials. One such material is precast concrete. The following article points out factors to consider before selecting a particular panel.

by Ralph C. Robinson*

Selection of precast concrete curtain wall and facing panels is complicated by the increasing range of choices in these products now available. More and more high-rise buildings are incorporating some type of precast concrete facade units. Examples currently under construction include the Pan-Am and Bankers Trust Buildings in New York, and the Michigan Consolidated Gas Company Building in Detroit (*see* A/E NEWS *July 1961, Preview*)

Structural considerations

For certain types of buildings, an important point to consider is use of the building "skin" as part of the structural system. Factory-made precast concrete panels can often be used without a framing grid; they are reinforced to carefully controlled standards, and can be further strengthened with prestressing where design considerations require it.

Naturally, the structural system itself and the materials used in framing the building have considerable bearing on the structural uses of precast panels. Where flat floor slabs are to be used *without* spandrel beams, precast panels can be designed to assist in resisting lateral loads. This is done by means of welded connections to columns. In many instances, flat floor slabs are subject to considerable vertical movement. Where this happens, restraining anchorage between panel and floor must be made flexible (*see details, p. 28*). This will prevent floor movements from transferring the load to the wall panels.

Where spandrel beams *are* used, the panels may be supported entirely on the spandrel beam. The panels are then designed merely to support sash and assume all wind loads.

Where design factors dictate the use of a *separate* framing grid, the panels may be used as a simple enclosure, or curtain wall.

Joints and sealing

Another functional aspect involves joints and sealing materials. With the advent of polysulfide rubber and other chemical curing elastomeric joint sealants, proper sealing has become less dependent upon joint profiles. Where the sealant is properly applied over a suitable compressible backing material, simple butt joints are made weather-tight. However, various joint profiles such as lap joints, tongue and groove, and keyed joints are also used in panel assembly where special conditions warrant it.

A further functional aspect to consider is the *U* value; almost any desired insulation value can be achieved. The insulation can be applied sandwich-style in the center of the panel, or laminated to the back of the unit. Either rigid insulation, such as plastic foams, fiber glass or foam glass, or concrete itself, can be used as insulating materials. Integral insulation tends to reduce heating and cooling costs.

Sun control

Another important consideration in panel selection is sun control. Recent studies have pointed out that cooling loads are markedly reduced in air-conditioned buildings when sun control members on the facade shade large wall areas during critical periods of the day. A saving of 20% was recently reported by the architect of a large office building in Florida.

Techniques by which sun control has been achieved with precast concrete panels include use of combination window frame and spandrel in a shadow box effect; horizontal projecting fins or "eyebrows"; vertical fins, or a combination (*see fig. 1*); projected panel from the normal wall surface (*see fig. 2*); splayed panels that project over the window surface; and precast screen or grille walls. In many instances, the shading projection can be produced integrally with the basic wall units. This simplifies erection and structural connections, and leads to a cleaner, less "cluttered" exterior.

Further considerations

Other functional aspects of precast panels to consider are the size of panel, type of corner, column details (if columns project beyond wall line), soffit returns, and coping details. Sill and soffit can become integral parts of one

---

** Mr. Robinson was born in Canada, but went to American schools, finally attending the University of Washington. He is vice president of the Mo-Sai Institute and chairman of its Technical Research Committee.*

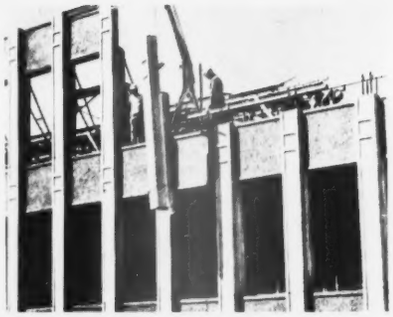


FIGURE 3. Derrick is being used to hoist large vertical structural element into place.

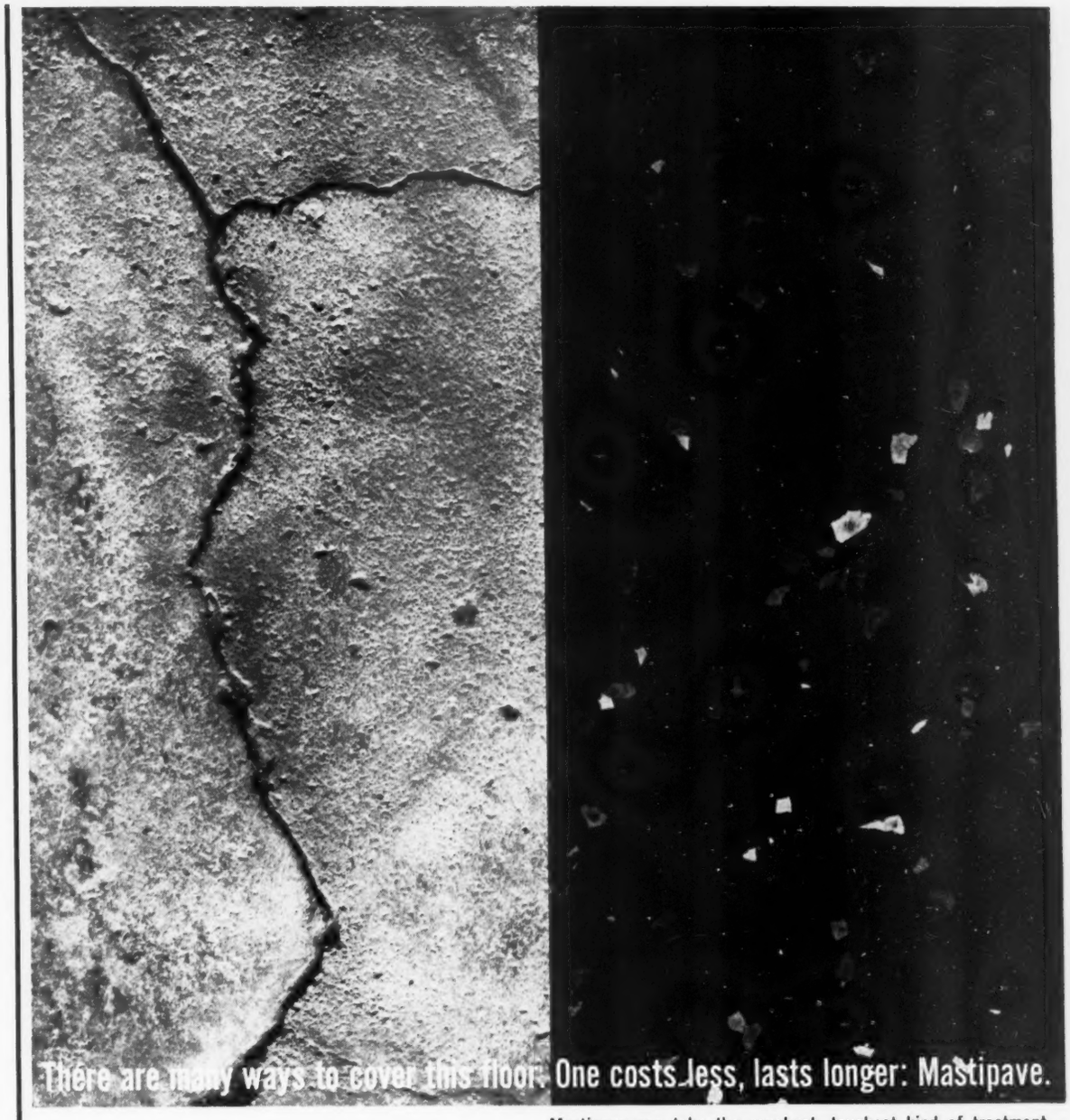
large panel; deep corner returns can be cast in one piece; coping and column units can be manufactured and installed in large segments (*see fig. 3*). Such provisions reduce troublesome joint problems to a minimum.

In selecting size of panels and determining whether or not to incorporate return features at corners, sills, soffits and the like, cost factors should be weighed against advantages gained. As in any production-line material, the greatest savings are realized when repetition of sizes and shapes is used to the maximum. Where sills and soffits are incorporated in the panels, and design does not allow uniformity, manufacturing costs naturally rise. The same is true on smaller buildings with fewer members. In such cases it may be advisable on a cost basis to use plain panels with detached sills and returns.

Sash design should be studied

The installation of sash in the precast concrete panel wall system also deserves careful study. Connections can be so designed that sash weight and wind loads are carried by the panel structure. Shadow box units can be manufactured with built-in provisions for insertion of sash or fixed glass. Inserts of various types can be provided in panels, reducing sash installation to mere use of a screwdriver.

It is important to allow tolerance for differences between sash materials and precast concrete panels, without at the same time endangering watertightness of the structure. Such differences include differential expansion and contraction, panel variations from absolute plane, and panel bow caused by exterior and interior temperature differentials. Panel and window unit manufacturers are best consulted directly on this point, owing to the spe-



Mastipave can take the roughest, toughest kind of treatment—and still wear a shine. It resists most acids and stains. Stands up under heavy foot and machine traffic. Won't splinter, rot or mildew. Wipes clean with water. Even heals itself when cut. Sound amazing? That's Mastipave . . . in smooth surface **Regular,** decorated **Deco Tread,** non-slip **Grip Tread** . . . and rolls and tiles. Lay it anywhere you need rugged, really economical floors.

PABCO SINCE 1884

PABCO Industrial Products Division, Fibreboard Paper Products Corporation
Dept. AE, 475 Brannan St., San Francisco, California
Send specification brochure showing all Mastipave types, colors.

NAME_____ TITLE_____

FIRM_____

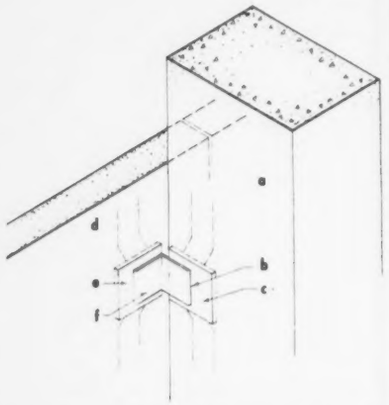
ADDRESS_____

Circle 116 for further information

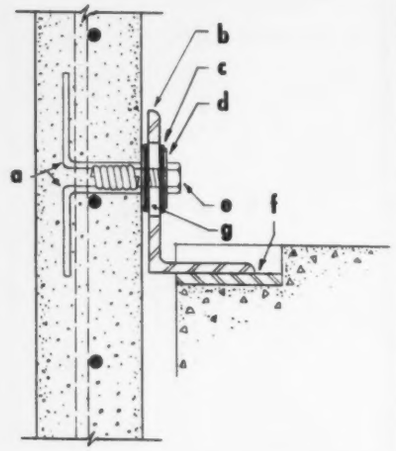
cific nature of most problems likely to arise in this respect.

Appearances

Precast concrete panels provide a wide measure of surface treatments. There is essentially no limit in terms of *color; textures* range from smooth cast surfaces to exposed aggregates of fieldstone magnitude. Chiaroscuro effects can be achieved with shapes in sculptured relief, with rectangular and warped surfaces, or with a variety of screens. Exposed aggregate materials are usually available in the wide color and texture ranges inherent in granite,



TYPICAL WELDED CONNECTION to column resists lateral loads in absence of a spandrel beam. Two or more such assemblies are needed per panel at each column to develop required strength. a structural column. b ¼" weld. c 6"x6"x ½" plate with lugs cast into column. d precast panel. e 6"x6"x½" plate with lugs cast into back of precast panel. f 4"x4"x ⅜" angle, 4" high.



FLEXIBLE RESTRAINING ANCHOR. a ¾"x3" deep x 8" wide coil wire wing nut. b 4"x6"x⅜" angle, 4" long, with vertical slot, and welded to plate cast into slab or beam. c rubber washer. d flat washer. e ¾"x3" coil bolt. f ¼" weld. g vertical slot in clip angle.

OUT OF THE BOX

...FAST!

UNIT Lock by CORBIN is delivered to the job completely factory-assembled —comes as a unit—installs as a unit—requires no adjustment, assembly or re-assembly. In addition, Unit Locks deliver a long life of maintenance-free performance.

On multiple-door installations in schools, institutions, hotels and other large projects, the saving is substantial.

And, where wood or metal doors reach the job already pre-cut with a notch, the advantages are even greater. Locks are simply taken from the box, placed in the door, 3 screws tightened—and the job is done!

Circle 117 for further information

UNIT—REG. U. S. PAT. OFF.

It pays to make it CORBIN—throughout!

Attractive Designs

Shown is the popular CORBIN Unit Lock in Melody Design No. 911. Other smart-looking designs are available in brass, bronze, aluminum or stainless steel trim. All functions. UL-approved for Class B, C, D and F Lable doors. May be master-keyed with other CORBIN locks.

CORBIN

P. & F. CORBIN DIVISION

THE AMERICAN HARDWARE CORPORATION
NEW BRITAIN, CONNECTICUT

Circle 117 for further information

quartz, and various vitreous materials.

Color is achieved by various techniques. In *plain cast* finishes, a number of compatible pigments can be combined with white cement. Deep colors and some shades of blue and green, however, may undergo considerable change. When *exposed aggregates* are used, the range of permanent colors is broadened considerably. Subtle combinations may be achieved by blending natural or manufactured aggregates with a white or pigmented concrete matrix.

The physical and chemical characteristics of aggregates should be carefully investigated before they are used: quartz, granite, and vitreous materials have shown themselves to be extremely durable. Aggregate sizes, colors, and degree of exposure or "relief" can be controlled for any desired degree of texture emphasis.

"Sculptured" panels of varied profiles (such as bas relief, incised patterns, splayed and curved sections) are made possible because the plastic nature of concrete makes the forming relatively simple; these forms may be made from sculptor's models as well as from architect's or artist's drawings. Shadow box frames and pierced screens whose profiles give the facade an overall patterned effect may be included in the "sculptured" category.

Initial cost vs. maintenance

Where a simple and inexpensive enclosure is desired, plain, precast panels of the tilt-up variety (with no integral surface treatment) may prove satisfactory and the most economical; a small additional investment can provide decorative treatment.

When color is introduced, costs will vary according to method (painting, pigmenting the cement matrix, or using exposed aggregate). In terms of first cost, painted panels may seem most economical. However, periodic refinishing of the painted surfaces will probably be necessary because of climatic conditions and exposure to elements, so that "over-the-years" cost may be substantially higher for painted panels than for those that are integrally colored. On the other hand, problems with color uniformity and highly absorptive surfaces in a plain panel (pigmented or not) may offset the additional cost of the painted panel. While the exposed aggregate panel may be higher in *initial cost* than either of the other two, it may, because of low maintenance, prove to be the most economical in the end.

The metal curtain wall: whose responsibility?

In the frank statement which follows, the author, an experienced fabricator, makes some points which should provide the architect and engineer with much food for thought.

by Gordon H. Smith*

The metal curtain wall has matured over the past decade. And in the wake of its climb to architectural prominence, there arose an important new branch of building technology: metal curtain wall fabrication — and a new technician: the metal curtain wall fabricator. The fabricator's responsibilities, his relationship to the architect, the need for both to work in harmony towards the same objective, are the framework of this article. It is hoped that this discussion of responsibilities will serve as a realistic and informative backdrop for the reader when he plans his next curtain wall building.

Some time ago an architect approached this fabricator to discuss an important curtain wall project. The architect's preliminary details were examined by the fabricator's engineering department and found insufficient in that proper provision had not been made to insure weathertightness. Many of the advantages of curtain wall construction had also disappeared and the cost per square foot failed to reflect the economies attainable through metal curtain wall.

Information for the original detailing was based largely on application of individual principles from various manufacturers' catalogs. An isolated feature of one manufacturer's system, however, is not necessarily compatible with that of another's. The problem here was mainly one of "catalogs without consultation." While much practical information is contained in the better company catalogs, they were never designed to take the place of discussion between architect and fabricator.

Reputation at stake

The importance of overcoming a problem of this type is reflected in the stake which both architect and fabricator have in the creation of a new building. Therefore, to seek identity of views on the various details that go into the curtain wall is to the advantage of architect, fabricator and owner alike. The fabricator makes his living out of metal curtain walls and, as a result, is intimately familiar with its functional intricacies. He knows that problems and pitfalls which plagued the metal curtain wall during its early stages need not be stumbling blocks today; so that an architect's logical assurance of a correctly functioning curtain wall is consultation with a reputable fabricator.

This prompts us to discuss what we mean by "reputable fabricator." He is one who has worked actively with leading architects, thereby developing an inventory of experience that can be profitably applied to future work. Consequently, only the fabricator with a record of successful achievement should be accepted for consultation and for supplying the architect's curtain wall requirements. The fiscal health of a fabricator is a good barometer of dependability and will generally tell the architect whether his job is in safe hands.

Consultation during design

The complex aspects of metal curtain wall design, engineering, fabrication and installation demand the early attention of specialists. Technical advice on the mechanical considerations of metal curtain wall design is available and should be utilized by the architect from the outset. Structural integrity must be combined with aesthetics in the finished wall. Engineering modifications should support the architect's design without making their presence known.

After the aesthetic concept has gelled, the fabricator can submit practical suggestions for realizing it structurally. He should be consulted as to the best type of material, alloy and finish; methods of providing for expansion and contraction; the factors in sealing; and the methods of dealing with condensation. To assist in correctly preparing detailed drawings, the fabricator must make full use of his engineering, testing, and production facilities.

Selection of alloy and finish. Whatever metal is used, the questions of alloy and finish must be evaluated. Structural requirements, methods of fabrication, and various finishes each demand particular alloy types. The fabricator can help the architect evaluate the pros and cons in choosing the best alloy for the intended structural use and aesthetic purpose.

Expansion and contraction. Temperature changes cause movement of metal curtain wall units due to expansion and contraction. This sometimes subjects caulking to stress beyond its material limitations, which in turn causes it to fail. To prevent this from happening, proper caulking and sealing must be incorporated into the design, and due care must be exercised in the selection of caulking material. Provision must also be made to permit expansion and contraction without harmful buckling.

Condensation. Condensation is another danger. It is not, however, a new problem, and experience with other types of construction has made it relatively simple to cope with. These methods should be spelled out in the detailing and explained where necessary in the specifications.

**Mr. Smith is vice president and chief engineer of Albro Metal Products Corporation. A graduate of the Yale University School of Engineering, he is a civil engineer with working and administrative experience in the various phases of metal curtain wall development. In addition to his Albro responsibilities, he is chairman of the Metal Curtain Wall Division of the National Association of Architectural Metal Manufacturers (NAAMM) and a vice president of the Association.*

Specifications. Simultaneously with the preparation of working drawings, the fabricator should be encouraged to participate in the preparation of specifications. This will help avoid future misinterpretation and possible deviations from the original design. Clear and concise specifications will assist all fabricators in preparing realistic and competitive bids. The scope of work under this section of the specification must encompass the entire skin — grid, panels, glass and sealants. The contractor must be prohibited from buying these separately, since one man's total responsibility for the wall is the secret of its success.

Mock-up and testing. Where mock-ups are contemplated, the fabricator can be of assistance in determining the extent of the mock-up and the type of test. Not every wall should require a mock-up or test, as a test is only necessary to evaluate new design principles.

Prequalification. As final insurance, the architect should, by specification, restrict bidding to a list of qualified fabricators — all of good reputation. In cases where the owner feels this is too restrictive, additional fabricators should be required to gain approval 10 days before the bid due date. This is to do away with the possibility of the owner being unduly swayed by an unrealistically low bid. Such a bid may be submitted by a fabricator whose reputation for substandard quality would not permit his inclusion on the original bidders' list. Bids should be accepted only from fabricators who are on this approved list.

The fabricator during construction

Shop drawings. After the contract is awarded, the fabricator chosen must prepare shop drawings. Shop drawings of the utmost importance, particularly as the fabricator with whom the architect consulted is not necessarily the successful bidder. It is the job of the successful bidder to report to the architect any alterations that he may consider necessary. Furthermore, the architect must review these drawings carefully and insist that they clearly cover all aspects of the wall. Rather than arbitrarily insisting on changes which, in the final analysis, may not be desirable, the architect should consult with the fabricator to insure mutual understanding on all points. Such an outlook may permit changes which will be of help to the fabricator without affecting the design. Knowing that he will have such opportunities, the fabricator will be able to submit his best price at bidding time, which will result in savings to the building owner.

Supervision. Supervision is the responsibility of the architect. Therefore, a thorough inspection should be made of the various parts of the wall during fabrication, testing and installation. This is analogous to checking the analysis of a batch of concrete or a pressure test in a pipe line, and will provide a next to final check to insure conformity to approved details. It should be of a routine nature, as the fabricator with his technically-trained supervisory personnel will be working to the parameters established by the specification.

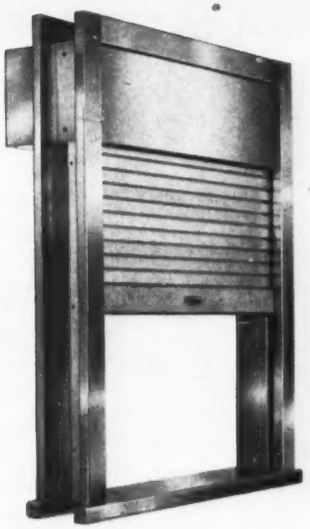
Time, talent and ten years hence

From the point of view of the fabricator, both his own role and that of the architect are summed up in one central element: time. It is essential for the architect to spend the necessary time supervising the curtain wall. This requires no more time than he would spend on any other important phase of the construction.

And what of the years ahead? Certainly, the metal curtain wall has come of age. In 1950 the architectural profession began reshaping city skylines with metal curtain walls, but the new method of building developed so rapidly that errors were made in the early stages.

Nowadays, however, there is no excuse for a well designed, correctly installed curtain wall building to have either problems of monotony of appearance, or any problems of leakage. Metal curtain walls represent a very high degree of design variation, and no two need be exactly alike, despite some thinking to the contrary. Mullions vary; so do window arrangements and types, colors, materials and panel types.

Two opposite trends will characterize the next ten years: diversification in design and standardization of components. New uses for metal curtain walls are being found every day and there exists a large reservoir of creative ideas which is relatively untapped. It remains for the architect and the fabricator, working towards the same goals, to draw from this reservoir as ingenuity and circumstance permit, each fulfilling his own role with a knowledge and appreciation of the other's.



New Cookson Integral Counter Door-and-Frame Units Come in Standard Sizes, Priced 25% Less, Cost Less to Install

Full Protection Plus the Compatible Architectural Look

Long the world's largest manufacturer of custom-built counter doors, Cookson now offers architects and owners a single, completely unitized frame-and-curtain for counter openings or pass windows. A standard line of four sizes is now available, to fit wall dimensions from 4" to 10" thickness, and rough openings of 4'0" x 4'0"; 6'0" x 4'0"; 8'0" x 4'0"; and 10'0" x 4'0".

Prices are at least 25% less than custom built counter doors and frames in other sizes. In addition, the Cookson frame can be set in place *at any time during construction*, at the convenience of the contractor, resulting in lower installation costs. These units are furnished with a durable Cookson Type CD8-2 "Alumilited" Counter Door Curtain, placed in a stainless steel frame with sparkling No. 4 finish. Stainless steel curtain also available.

Here is the most practical, attractive and economical answer to standard size counter door applications, for schools, cafeterias, hospitals and ticket windows. See our catalog in Sweet's or write for your personal copy: The Cookson Company, 700 Pennsylvania Ave., San Francisco 7, Calif. Sales and service in principal cities.

COOKSON

ROLLING DOORS • FIRE DOORS • GRILLES • COUNTER DOORS • COILING PARTITIONS

Circle 118 for further information

Curtain walls: progress in plastics

by Robert R. Keller and John P. Whittemore*

When plastic sandwich structures were first introduced several years ago, they were used only in limited areas, mostly in small glazing applications. However, other than the factors of introduction and acceptance inherent in the marketing of any new product, there were two considerations which may have contributed to an initial lag in this respect. One was inefficiency in adapting the product to existing framing and closure systems. The other was fire—and its effects within a building employing this type of wall.

Closure systems

In the initial "glazing" applications and even in a few of the early larger installations, little use was made of the structural capabilities of the plastic sandwich that derive from the high-tensile-strength fiber glass faces bonded to a strong mechanically interlocked aluminum grid core. In these early installations, the plastic units were simply sealed into conventional structural mullion framing systems. The result was that the building owner paid a relatively high material cost for the plastic structure without receiving all of the cost-saving advantages that it could offer. Costs were duplicated.

** Mr. Keller, a graduate of Dartmouth, has had nearly 30 years of practical experience with the techniques of laminating materials. He is presently treasurer of Kalwall Corporation. Mr. Whittemore has a degree in mechanical engineering from MIT; for the past 5 years he has been concerned with the engineering aspects of plastic panel design on a consulting basis.*

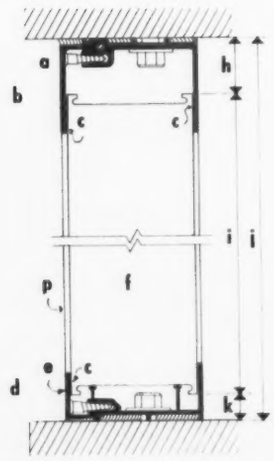
In examining the curtain wall systems available, it was found that the great majority were of the type that employ a separately erected framing system, consisting of structural mullions and semi-structural muntins or horizontal members. This type of system is designed for non-structural panel components which are glazed into the openings thus formed. This engineering concept was discarded in favor of a system in which horizontal and vertical joints at the head, sill, jamb, and between units serve only the functions of *securing* and *sealing* the plastic units to the building. With this system, the normal wind loading is carried by the plastic sandwich structure itself, making it capable of relatively long spans.

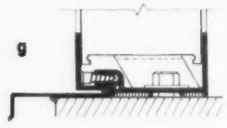
Sealing as main function of closure

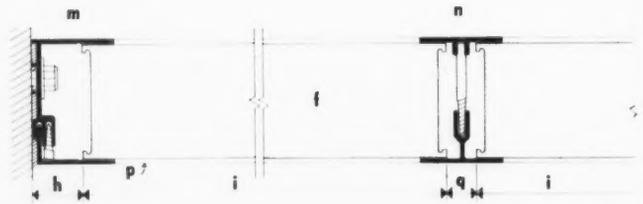
The system also allowed the design of the horizontal and vertical closures to be directed primarily towards accomplishing a permanent seal. Since job-site conditions are so seldom fully controlled, design requirements were set such that the system would not only provide a weather-tight seal, but would be as nearly "foolproof" in installation as possible.

The resulting design consists of two-piece clamping closures, made with aluminum extrusions joined by stainless steel screws. In installation, the interior section of the two-piece extrusion is fastened continuously around the perimeter of the building opening that is to receive the plastic sandwiches. After the sandwiches have been set in place, one extruded aluminum section is clamped to the opposite section by means of the stainless steel self-tapping screw into a continuous groove that is an integral part of the opposite section. The thin-walled groove is designed to grip the screw by spring action. This spring action not only increases the angle cut by the hardened threads of the screw, but it also achieves the advantages of a continuous "threaded" groove without losing strength.

(Continued on p. 35)



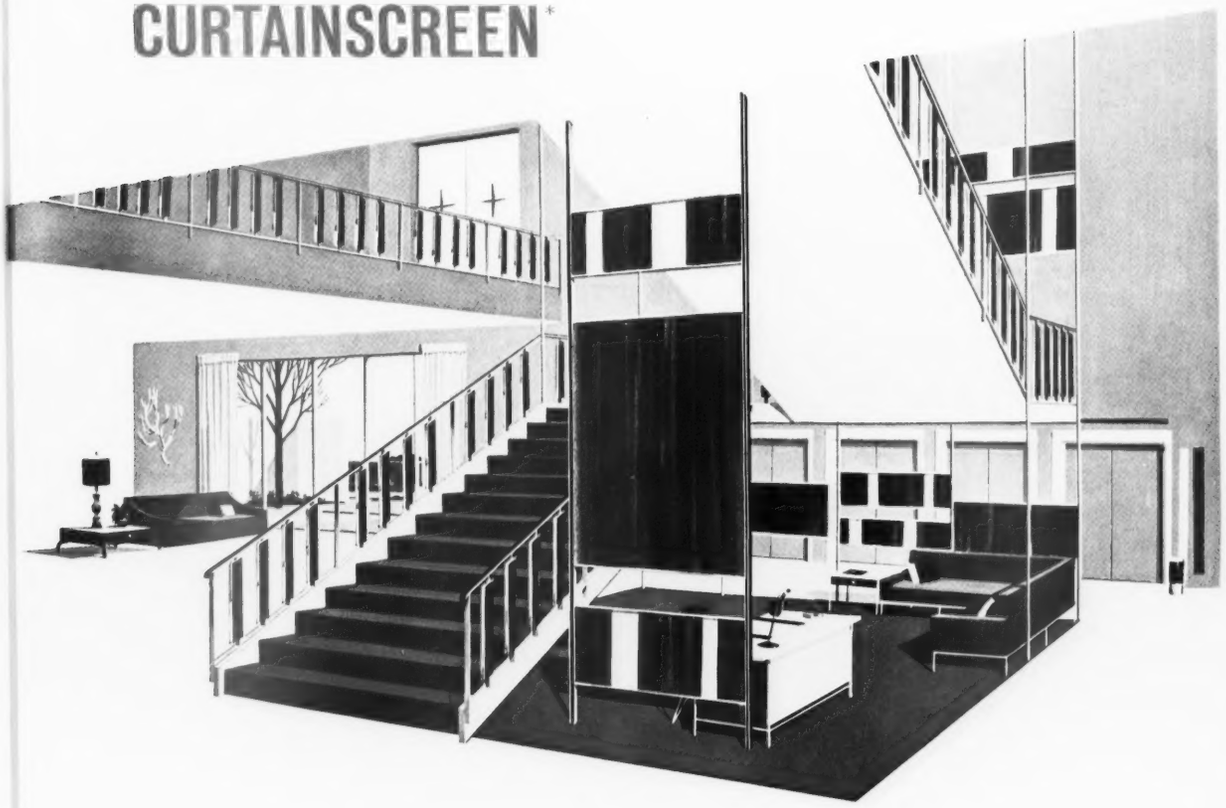




CLOSURE SYSTEM DETAILS LEGEND. a stainless steel screw. b head. c reinforced mastic tape. d sill. e aluminum frame. f aluminum grid core. g sill with drip. h 1¼". i panel dimension. j rough opening. k ⅝". m jamb. n batten. p fiber glass face. q ¾".

Circle 119 for further information about JULIUS BLUM →

NEW DESIGN DEVELOPMENT: CURTAINSCREEN*



NOW YOU CAN CUSTOM-DESIGN RAILINGS AND DIVIDERS (OR ANY KIND OF SCREEN, INSIDE OR OUTSIDE)

What you're looking at is Julius Blum's **Curtainscreen,** the **versatile** screening system. Railings space dividers and vision barriers shown here are all formed from this new system – so flexible that it permits custom designs using **standard components,** so adaptable that it can be employed for both interior and exterior railings and screens of any type, any size, any scale! And with **Curtainscreen,** the architect or decorator not only can control the design of individual screening elements, but also can provide a new degree of coordination between separate elements. Here, for example, the use of walnut both in the screen panels and the railing rosettes help integrate the total design. Typical variation shown below indicates something of the range available to the imaginative designer.

The **Curtainscreen** system consists of aluminum and plastic components available in a variety of finishes: anodized, plain (for anodizing or enameling), etched with decorative designs, or laminated with wood veneers. Plastic components are available in black or in colors. Standard components include mullions, panels, glazing stops, and spacers. The system can also be used to frame a wide variety of other materials – wood panels, glass, plastic or glass fiber sheet. The potential combinations of colors, sizes, shapes, textures and materials are myraid, and so are the potential applications. For a more complete introduction to **Curtainscreen** components, features, details, applications and design possibilities, write for a copy of our new Bulletin.

Typical Design Variation and Construction Detail

*TRADE MARK *PATENT PENDING

JULIUS BLUM & COMPANY, INC., CARLSTADT, NEW JERSEY

Phones: Carlstadt, New Jersey, GEneva 8-4600; Philadelphia, MArket 7-7596; New York, OXford 5-2236

JB®

Pitfalls of "or-equal" flooring specs

With floors just as with many other materials, an "or-equal" specification can lead to dispute and dissatisfaction for client and architect. The flooring material in question and the precise job it is to perform must be carefully considered before the specification is written. There are several reasons why it is not realistic to expect that there is a satisfactory substitute for a specific flooring material. First, floors play an important decorative as well as functional role in the finished building. They must be evaluated against many different needs and standards. Second, no two manufacturers make truly identical products. Formulation, colors, designs, and manufacturing processes all vary. And third, some flooring products have exclusive characteristics and therefore no "equals."

The architect's role

Because of the many variables to be considered and the importance of having the correct flooring material for each job, the architect should exercise maximum control in his flooring specifications. An "or-equal" specification invites, if not requires, the contractor to take control out of the architect's hands. By determining the precisely correct floor for each job, and then requiring that it be used, the architect is assured that the quality of his work is not compromised.

In some cases where a specification for a proprietary product is not practical, some architects have tightened the specification while still allowing for expediencies. For example, a sentence can be added to the specification to read as follows: "Armstrong Excelon Tile, or an approved equal, with the manufacturer and color to be selected by the architect."

Competitive bidding with "base-bid" specifications?

Specifications calling for base-bids do not exclude competitive bidding. Base-bid specifications for Armstrong floors, for example, will produce the required number of bids on Armstrong with quotations varying with the pricing practices and facilities of individual flooring contractors. Because Armstrong grants no exclusive franchises, Armstrong floors are available to every reputable flooring contractor.

Exclusive products

Because of many different wear, subfloor, and traffic conditions under which resilient floors are used, Armstrong has developed a number of materials with unique characteristics that solve particular flooring problems. A few examples: Tessera and other styles in sheet Vinyl Corlon with moisture-resistant Hydrocord Back, that can be used on or below grade. Armstrong Imperial Excelon (vinyl-asbestos) Tile is manufactured on special factory equipment which produces a design that goes all the way through the thickness of the tile. Armstrong Linotile is specially formulated and cured to provide the best all-around performance of all resilient floors. These floors have no "equals." By specifying particular products such as these for installations that make use of their unique qualities, the architect gets superior results and full benefit from special research done by the manufacturer to develop the product.

Why specify Armstrong?

All Armstrong floors are manufactured to the highest standards of uniformity of size, gauge, and color to give installations of superior appearance and performance. And Armstrong makes every type of resilient floor (including some that nobody else makes). So Armstrong Architect-Builder Consultants are free of prejudice as to type and will recommend the one floor exactly right for each interior. No matter what your decorative, functional, or cost requirements, they can be met with one or more of the floors in the Armstrong line.

Special services for architects

For help with your flooring specifications, or anything to do with floors, call the Architect-Builder Consultant at your Armstrong District Office. A flooring expert, he is ready to give you the benefit of his wide experience. To solve special problems, he can get you the services of the Armstrong installation experts and the Armstrong Research and Development Center. Or you can write direct to Armstrong, 1610 Ryman Street, Lancaster, Pennsylvania.

Corlon,* Excelon,* Hydrocord,* Linotile,* Tessera, and Imperial* are trade-marks of

*REGISTERED

Armstrong
CORK COMPANY
FLOOR DIVISION • LANCASTER, PENNSYLVANIA

PROGRESS IN PLASTICS

(Continued from p. 32)

A reinforced mastic tape between the sandwich edge and the serrated area of the aluminum extrusions provides a continuous positive seal around the perimeter of the plastic sandwich structures. Thus, the clamping action of the two-piece sections, combined with the ability of the one-part mastic tape to adhere firmly even to smooth, non-porous surfaces, gives a seal free of the flaws to which hand-caulked installations are subject.

Cost

This assembly is installed without requiring undue skill on the part of workmen, and is not subject to varying conditions at the job-site. It also automatically compensates for normal building dimension tolerances and temperature expansion.

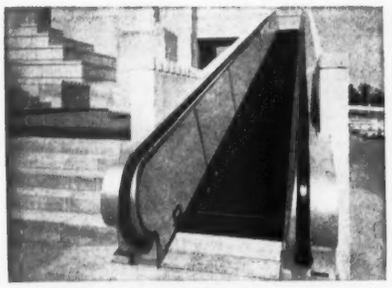
The lightweight aluminum sections are less expensive than a structural mullion framing system, and require significantly fewer labor hours for installation. The plastic sandwich structures come in sizes up to 4'x20', thus eliminating many of the closure members normally required.

Author's plea for a lower factor

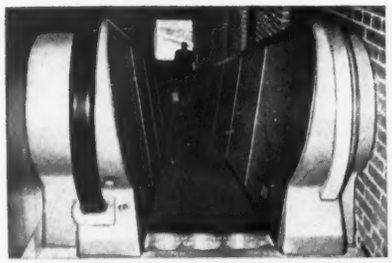
In the early design of walls, probably one of the first standards set for strength was the criterion used for allowable deflection for walls having an interior plaster finish. The limiting deflection factor L/360 (where L=span in inches) that is used in this type of construction is familiar to all associated with the building field. With the development of curtain wall techniques, the National Association of Architectural Metal Manufacturers has adopted a standard deflection ratio of L/175. These curtain walls obviously do not require the rigidity of a plaster-finished masonry wall, but because of the common usage of glass and because of the caulking systems used, a high degree of rigidity has been maintained.

Exhaustive testing has shown that the plastic sandwich structures, as described, present an entirely different situation, and should not be limited by criteria established due to characteristics of other new types. Plastic sandwich structures (and, incidentally, many other curtain wall systems) are usually not fully stressed when deflection is limited to L/175 at a 20 lbs/sq. ft. load. Therefore, from a safety standpoint alone, a much higher deflection could be allowed. This con-

ELIMINATE PEDESTRIAN TRAFFIC PROBLEMS!



SPEEDRAMP PASSENGER CONVEYOR SYSTEM— ROBINSON MUNICIPAL AUDITORIUM, Little Rock, Ark.



SPEEDRAMP PASSENGER CONVEYOR SYSTEM— AURORA SAVINGS AND LOAN ASSOCIATION, Aurora, Ill.

SPEEDWALK PASSENGER CONVEYOR SYSTEM— MUSEUM OF SCIENCE AND INDUSTRY, Chicago, Ill.

People can move smoothly, safely and conveniently in Public Buildings via

SPEEDWALK & SPEEDRAMP

(HORIZONTAL TRAVEL) (INCLINED TRAVEL)

PASSENGER CONVEYOR SYSTEMS

Building operators whose facilities house organizations, businesses or activities for the general public are confronted with a major obstacle — pedestrian traffic problems.

SPEEDWALK (horizontal travel) and SPEEDRAMP (inclined travel) Passenger Conveyor Systems eliminate pedestrian traffic problems. With installations from coast to coast and abroad or wherever SPEEDWALK and SPEEDRAMP Conveyors have been applied, people move smoothly, conveniently and safely from point to point. Areas of pedestrian congestion are converted into free flowing, foot-saving avenues of transportation. Graphic examples of these applications are shown at left.

The beauty of this most modern method of pedestrian movement does not lie in the design of the units alone, but in the application itself. SPEEDWALK and SPEEDRAMP Conveyors can be easily applied to new public buildings or to existing facilities as well, to bring them up to date. Initial costs are 20% to 30% less than "moving stair" type conveyances. The units operate with equal ease indoors or outside. Less moving parts assure less "downtime" and lower maintenance costs. Your planning won't be complete until you have investigated full details.

Write today for New Bulletin 1060

S-A
ENGINEERED BULK HANDLING SYSTEMS
MATERIALS HANDLING PRODUCTS
SPEEDWALK® PASSENGER CONVEYORS
FAIRMASTER® BALL BEARING UNITS
SPHERCO® BEARINGS & ROD ENDS

SPEEDWALK DIVISION
STEPHENS-ADAMSON MFG. CO.

GENERAL OFFICE & MAIN PLANT, 72 RIDGEWAY AVE., AURORA, ILL.
PLANTS LOCATED IN: LOS ANGELES, CALIFORNIA. • CLARKSDALE, MISSISSIPPI BELLEVILLE, ONTARIO • MEXICO CITY, D. F.

SEE THE MONTGOMERY ELEVATOR COMPANY REPRESENTATIVE OR THE STEPHENS-ADAMSON REPRESENTATIVE IN YOUR AREA.

Circle 121 for further information

TOMIC DOES IT AGAIN—with a revolutionary new All-Purpose Thinwall Fitting that packs every famous TOMIC Tap-On feature into a single fitting that meets all your thinwall requirements!

NEW **INSULATED, BUSHED EMT RAINTIGHT TAP-ON FITTING**

Patents: 2458276, 2986060

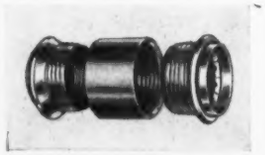
- **IT'S RAINTIGHT** OK for outdoors or in-concrete slabs!
- **IT'S BUSHED** No inside ridges to snag fishtape or fray wire!
- **IT'S INSULATED** For extra protection against shorts!
- **IT'S ECONOMICAL** Priced right—Finest Quality!

FAST, EASY INSTALLATION . . . WITHOUT TOOLS!

Just tap or push it on . . . and Tomic's new Insulated, Bushed EMT Raintight Fitting becomes an *integral* part of the thinwall . . . automatically puts standard pipe thread on EMT conduits! Patented pre-flex steel locking ring grips conduit securely at multiple points for positive grounds that won't shake, jar or work loose!

TOMIC RAINTIGHT TAP-ON COUPLINGS are ideal for long runs, saddles, bends, corners, etc... permit easy changes from EMT to rigid, flex—any cable—without special adapters.

Sizes Available: No. 20: ½" connector; No. 21: ¾" connector; No. 320: ½" coupling; No. 321: ¾" coupling. Write today for prices, samples and complete information.



tomic

TODAY'S FINEST ELECTRICAL FITTINGS PRICED TO SAVE YOU MONEY.

TOMIC SALES & ENGINEERING CO. 20,000 SHERWOOD AVE., DETROIT 34, MICH.

Circle 122 for further information

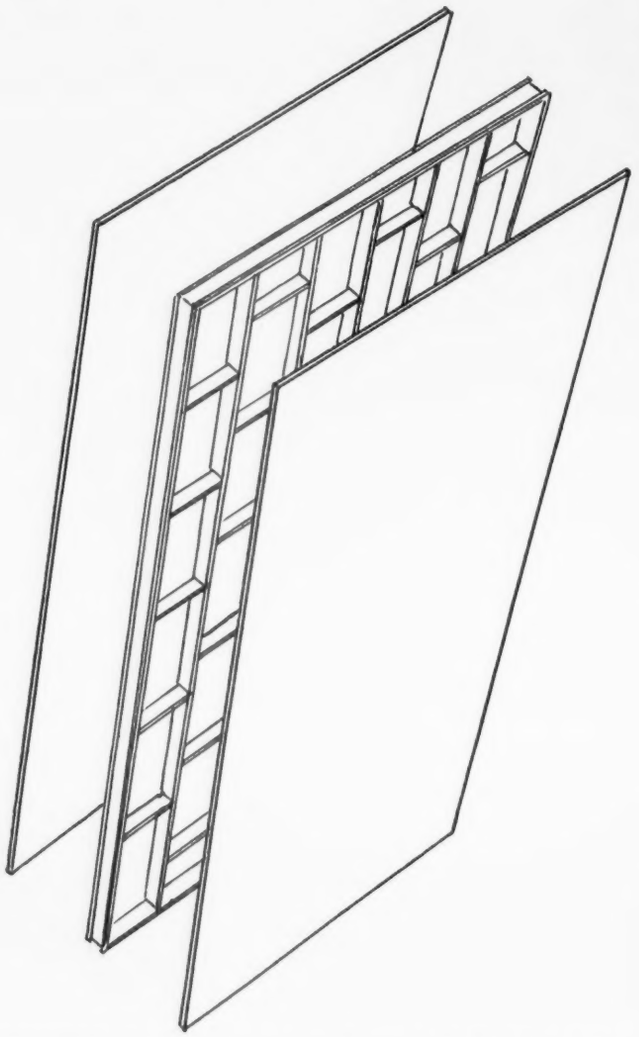
cept is analogous to the principles used in the design of aircraft wings. To anyone who has observed the great deflections allowed in these wings, it is clear that there is no reason to associate strength strictly with the absence of noticeable deflection. As an example, in 1960 an installation of the plastic sandwich structure in Florida was subjected to forces generated by 165 mph winds during hurricane Donna. No permanent deflection resulted in this system under the stresses developed.

It is believed that a wall application consisting entirely of these plastic sandwich structures can be satisfactorily designed under a deflection ratio of L/80 (at 20 lbs/sq.ft.) Not only are the sandwiches capable of these, and even greater deflections, but the newly designed non-structural closures and sealing methods are unharmed by deflections of this magnitude.

Fire resistance

Fire resistance has become a major consideration in the use of large quantities of plastic sandwiches—especially in metropolitan areas. While difficulty with existing building codes is incurred when the plastic sandwich is considered as a glazing material, its increasing use for entire wall areas, and indeed for entire buildings, throws the classification into an entirely different category with the building authorities.

Organic substances can be consumed by fire, and, of course, the resins in the face material of this plastic structure are in this class. However, a simple mechanical arrangement which



ISOMETRIC of a single panel shows the mechanically interlocked aluminum I-beam grid core sandwiched between two sheets of fiber glass.

includes these resins, has produced significant and unexpected results when the assembly is subjected to fire.

The polyester fiber glass faces, separated by an aluminum grid core, do, in fact, provide a practical fire barrier. In tests conducted by the leading manufacturer of this type of product, and witnessed by the Engineering Testing Station of the University of New Hampshire, it was shown that a sandwich of this type of construction is able to contain fire at a temperature of 1200°F for a period of time exceeding four hours.

Trial by fire

These tests were intended not to defy code authority, but as a practical demonstration of the capabilities of a new material. They were based on 4'x4' samples of the plastic sandwich structure, and 4'x4' samples of comparison materials: window glass and single-sheet fiber glass reinforced polyester. The samples were placed in the front opening of an oven containing

PHOTOGRAPH shows a night view of a building faced with a translucent plastic curtain-wall closure system (Ian Horne, architect.)

There's no waste with a PYREX® drainline

No installation waste. The new one-nut joint on PYREX® "double-tough" drainline speeds installation, saves dollars and days.

No corrosion waste. Pour whatever you like down a PYREX drainline—it's resistant to more acids and acidic materials than any other drainline.

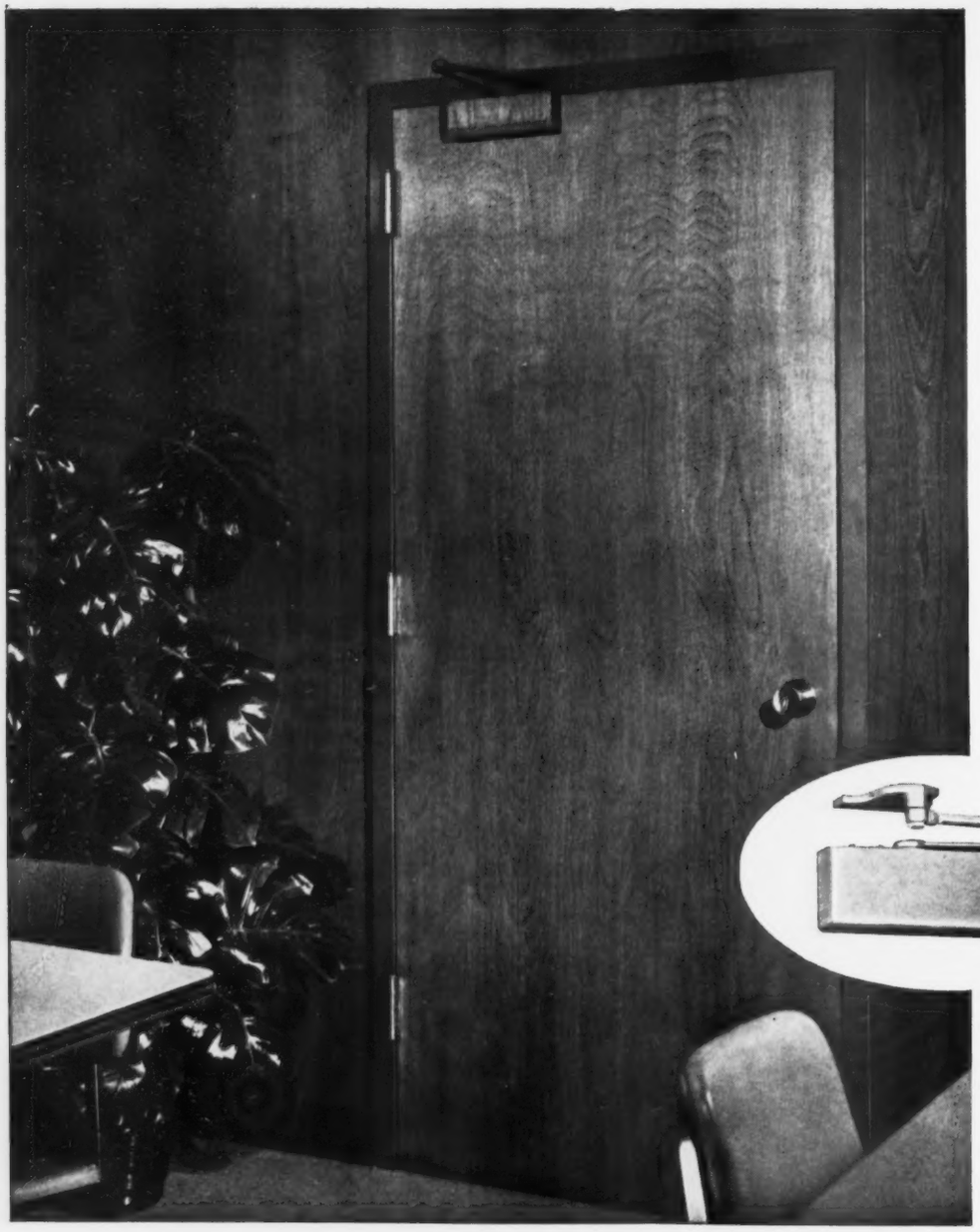
No maintenance waste. It neither leaks nor corrodes, so maintenance costs flush away. Should someone drop something down a drain or plug it up, you can spot the trouble visually.

If you want more reasons for specifying PYREX drainline, we've got a bulletinful. Write for a copy of PE-30. Plant Equipment Department, 4410 Crystal Street, Corning, N. Y.

CORNING GLASS WORKS

CORNING MEANS RESEARCH IN GLASS

Circle 123 for further information



SERIES 7000W —WOOD COVERED FOR WOODEN DOORS

SERIES P-7000 —WITH METAL COVER FOR METAL DOORS

Norton® Series 7000 Closers.....
The Custom Look for every door

1021

Only Norton's Series 7000 can assure you of a perfect match between door and closer throughout your entire building. Available with metal covers painted to match or contrast with the finish of metal doors. Available chrome plated to match other door hardware. Available covered with wood to assure a perfect match between door and room panelling.

Get complete details from your Norton representative today or mail coupon.

NORTON DOOR CLOSERS
for complete Architectural Compatibility

Norton Door Closers, Dept. AE-101
372 Meyer Road, Bensenville, Illinois

Please send Manual N-1 ☐
Have my representative call ☐

Name_____
Firm_____
Address_____
City_____ State_____

Circle 124 for further information

an oil burner. The temperature within this oven was maintained at 1200° F by cycling the flame on and off. The flame came in direct contact with the materials tested.

During the test, the glass sample cracked almost immediately, and fell out of its frame in less than five minutes; the single-sheet fiber glass ignited and was consumed within five minutes; the plastic sandwich structure contained the fire and kept a high degree of structural integrity for a period of 4 hours, at which time the test was stopped.

Examination following the test revealed that the resin of the interior face material was consumed by the fire, but the fiber glass reinforcing mat remained bonded to the aluminum grid, and formed a protective barrier that prevented heat and flames from reaching the exterior face. The exterior, therefore, never attained the temperature required for igniting the resin.

There are several points other than the fire barrier itself that are significant. First, this type of plastic sandwich structure cannot shatter after exposure to flame, with a consequent hazard reduction to persons nearby. Secondly, the fuel content of the interior face that actually burns is hardly more than the draperies normally hung behind a glass wall, or several coats of paint applied to a masonry surface. In all instances, during the tests, smoke produced during the burning of the interior resin stopped after the first 4 or 5 minutes of the test, and no toxic fumes were found.

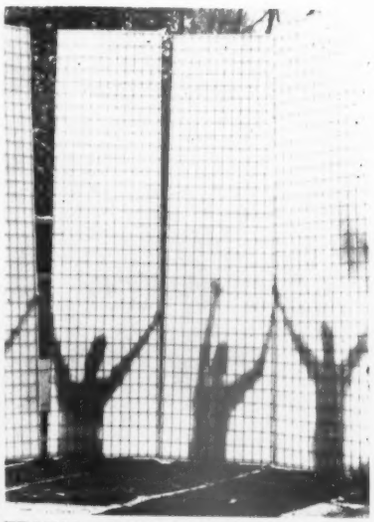
Additional tests

A second series of tests was conducted to determine the extent to which this plastic sandwich maintained its structural integrity after being subjected to fire. A test similar to the first was run for a period of one hour, after which a stream of water was directed at the panel from a fire hose at a distance of 20 feet under a pressure of 30 lbs/sq.in. The force caused no damage to the exterior surface of the plastic sandwich.

It must be mentioned that this test was a modification of standard testing procedures. Temperature of the flame was lower than that required by the standard ASTM test. This was done, however, not because of the plastic material itself, but because the 1200° F flames approaches the melting point of aluminum.

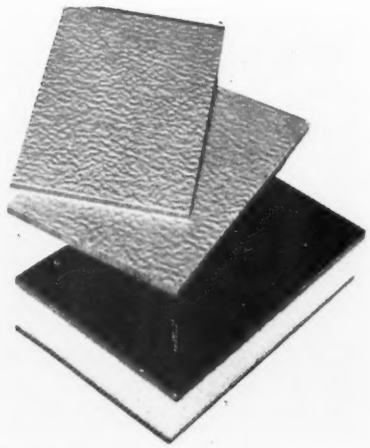
PRODUCTS, EQUIPMENT, MATERIALS

Report of recent developments by industry, based on data furnished by manufacturers. Inquiry cards for further information face pages 1 and 86.



TRANSLUCENT SANDWICH PANEL OF HIGH-STRENGTH

MFR'S DESCRIPTION: a new high-strength translucent sandwich panel.
USES: walls, roofs, and skylight
SPECS/FEATURES: panel consists of a core of plastic-fiber strips on edge, faced on both sides with translucent fiberglass sheets. Manufacturer says total absence of any metal within sandwich and use of a 4″x6″ grid module has increased insulation value. Cells may be colored or left plain. Panels are available in wide range of rectangular or custom shapes in sizes to 4′x20′, in thicknesses of ½″ to 3″. Recommended for attachment in wood, metal and neoprene.
AIA FILE NO. 23 24
MFR: ARCHITECTURAL PLASTICS CORP.
Circle 200 for further information



PORCELAIN ENAMELED ALUMINUM PANELS

MFR'S DESCRIPTION: aluminum building panel, porcelain enameled.
USES: panel construction
SPECS/FEATURES: variety of panels includes 3/16″ thick veneer panel weighing 1.3 psf; the ¼″ thick glazing panel weighing 1.6 psf; and the 1¼″ thick insulated or sandwich panel weighing 2.2 psf. Insulated panel is made by laminating a 1″ expanded polystyrene core to exterior and interior aluminum skins which in turn have been bonded to ⅛″ tempered hardboard backing.
AIA FILE NO. 17-A
MFR: MAPES & CO.
Circle 201 for further information

PREFAB CURTAIN WALLS SNAP/LOCK WITHOUT TOOLS

MFR'S DESCRIPTION: *Series 710* aluminum curtain wall system for one and two story construction.
USES: curtain wall installations
SPECS/FEATURES: all components of wall, including panels and ventilators, lap and interlock without bolts or nuts. Horizontals and verticals are pre-cut at factory to dimensions required. System is shipped knocked down for installation without further fabrication. Manufacturer estimates complete wall, including all materials and labor installs at an average cost of $2.30 per sq. ft.
AIA FILE NO. 17-A
MFR: PACIFIC CURTAINWALL, INC.
Circle 202 for further information

ALUMINUM STRESSED-SKIN CURTAIN-WALL PANEL

MFR'S DESCRIPTION: curtain-wall panel which utilizes high strength aircraft type construction.
USES: curtain-wall construction
SPECS/FEATURES: aluminum wall sheets are ribbed on centers and permanently bonded at each rib to glass fiber interior members. Core of panel is a glass fiber insulation bat. Design is said to allow tension and compression loads from wind action to be carried entirely by the aluminum sheets, helping eliminate tensile stresses in structural members. Available in 7 colors, 24″ and 32″

PRODUCTS, EQUIPMENT, MATERIALS

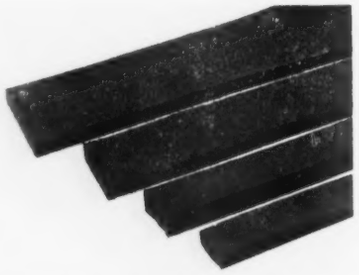
widths and lengths from 4′ to 20′. Installation and modification requires hand tools alone.
AIA FILE NO. 17-A
MFR: DRESSER-IDECO CO.
Circle 203 for further information

AIR CONDITIONING FOR CURTAIN-WALL CONSTRUCTION

MFR'S DESCRIPTION: air conditioning unit designed especially for use in curtain-wall construction.
USES: residential and commercial
SPECS/FEATURES: relatively small air conditioner designed solely for interior use in high-rise apartment or commercial office buildings employing curtain-wall construction. Air conditioner is design to "drop-in" a prepared opening provided at the bottom of window at same location as ventilation and heating unit.
AIA FILE NO. 30-F
MFR: AMANA REFRIGERATION, INC.
Circle 204 for further information

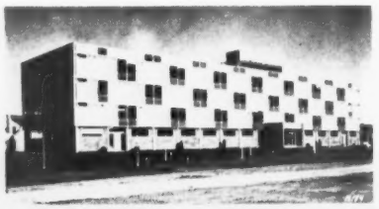
CURTAIN WALL SYSTEM FOR TWO-MAN INSTALLING

MFR'S: DESCRIPTION: curtain-wall system designed expressly for low-rise structures.
USES: motels, schools, and suburban commercial buildings
SPECS/FEATURES: system is flexible door or ceiling height sectional unit which accommodates a wide variety of facings. These are delivered to job site completely pre-assembled and factory glazed or faced.
AIA FILE NO. 17-A
MFR: UNIPANEL DIV., HI-VIEW PRODUCTS, INC.
Circle 205 for further information



CONCRETE JOINT SEALERS IN EXPANDED SIZES

MFR'S DESCRIPTION: new sizes in premolded concrete joint sealers.
USES: concrete construction
SPECS/FEATURES: new sizes fit any joints from ⅛″ to 2″ wide. Width are usually selected so that joint will hold sealer to about ⅛ of its expandable width. The 100% expandability of material then adjusts to any irregularities of joint width.
AIA FILE NO. 4-A
MFR: NATIONAL EXPANSION JOINT CO.
Circle 206 for further information



CURTAIN WALL SERIES WITH THINNER MULLIONS

MFR'S DESCRIPTION: an added design to a series of curtain-walls with reduced mullion sizes.
USES: curtain-wall construction
SPECS/FEATURES: new curtain-wall style line features a 2½″ wide vertical mullion and a horizontal mullion 2″ wide. The thinner design while usable on any size building is especially adaptable to low silhouette building, according to manufacturer. Any kind of sash, along with various panel designs may be used with this system. Pre-fabricated sections are assembled and fastened to the structural frame. Spandrel panels and sash or glass areas are then put in place and secured.
AIA FILE NO. 17-A
MFR: V-WALL DIV., H. H. ROBERTSON CO.
Circle 207 for further information

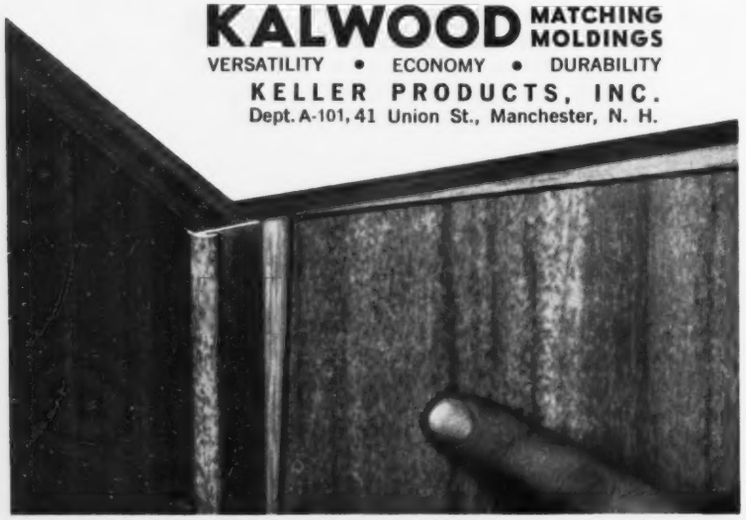
PRESTRESSED GIANT "T" ROOF & FLOOR MEMBER

MFR'S DESCRIPTION: a new precast prestressed concrete roof and floor decking member for clear spans up to 100′.
USES: concrete construction
SPECS/FEATURES: concrete member supplied in widths of 4′ to 8′ with depth of the single "T" stem variable from 18″ to 36″. Versatility of the new member for floor and roof construction is obtained by varying width, stem height and number of prestress tendons. Erection details include a variety of methods for assembly and fastening.
AIA FILE NO. 4-E-6
MFR: GEORGE RACKLE & SONS CO.
Circle 208 for further information

LOOK!... matching moldings

Colors and patterns to match all plastic laminates, Formica, Pionite, Micarta, or any plastic surfacing materials. Versatile Kalwood Matching Moldings meet all installation requirements with easily installed inside and outside corners, dividers, end caps. Sturdy plastic veneer permanently bonded to a precision aluminum extrusion provides a continuous surface effect, allows for panel expansion and contraction. See your laminate dealer, or write for descriptive literature.

KALWOOD MATCHING MOLDINGS
VERSATILITY • ECONOMY • DURABILITY
KELLER PRODUCTS, INC.
Dept. A-101, 41 Union St., Manchester, N. H.

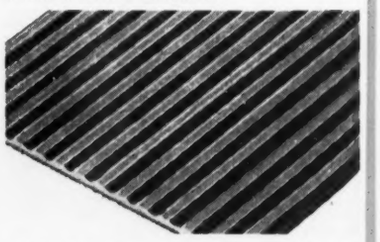


Circle 125 for further information

SPECIFY MELFLEX SAFELY
for stairs, landings hallways and floors

MOLDED RUBBER SAFETY STEP TREADS

Attractive, lasting covering for wood, metal, tile or concrete steps. Six marbleized colors (the color goes clear through) or plain black, square or curved nose, full 1/4″ thick. Maximum sizes available: 24″ deep by 72″ wide. And Melflex Diamond Grip Rubber Safety Treads are *listed by Underwriters Laboratories* — you can specify Melflex with assurance.



RIBBED MEL-ISLE® RUNNERS

Heavy traffic areas need better protection, too. Tough Mel-Isle Runners have deep ribbed design for safer footing . . . wear-resisting rubber for longer life. Supplied in 1/8″ or 3/16″ thickness, standard 36″ width, for varying service and design needs.

Also available: Matching Mel-Flor® smooth flooring in rolls or cut to specifications.

for lasting quality, Melflex pays

MELFLEX
PRODUCTS CO., INC.
410 S. Broadway Akron 8, Ohio
Circle 126 for further information

PRODUCTS, EQUIPMENT, MATERIALS

CURTAIN WALL SYSTEM IN NEW DESIGN SERIES

MFR'S DESCRIPTION: new aluminum window and curtain-wall series.
USES: curtain-wall construction
SPECS/FEATURES: sleeve mullions are used as an integral part of each unit. Adjacent units are bolted together, providing the same strength and appearance as conventional add-on mullions, manufacturer says. Projections are narrow, but sizes may be varied. Curtain-wall units are furnished with porcelain, ceramic, plastic, aluminum, steel or stone panels; and can be provided with *Alumilite* finishes. Curtain-wall is said to be especially suited for areas where projections may not be desirable.
AIA FILE NO. 17-A
MFR: CECO STEEL PRODUCTS CORP.
Circle 209 for further information

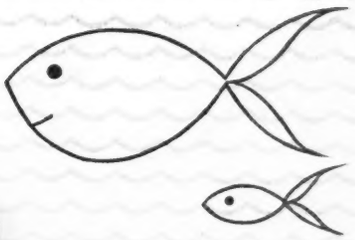
COATINGS/ADHESIVES

CONTACT CEMENT FOR PLASTIC LAMINATES

MFR'S DESCRIPTION: a contact cement for bonding hard sheet plastic laminates to plywood and metal and for bonding wood paneling to wall studs without using nails.
USES: adhesive applications
SPECS/FEATURES: cement combines fast drying time with long "open" time, according to manufacturer. Materials thus bonded can be drilled or trimmed almost immediately. When applied by brush or roller, bonding can be made any time between 10 minutes and 4 hours after cement is applied. When cement is applied by spray, bonding can be made between 3 minutes and 2 hours. Cement should not be used at less than 70° F.
AIA FILE NO. 17-F-1/24-A
MFR: ANCHOR ADHESIVES CORP.
Circle 210 for further information

ALUMINUM-TO-GLASS CONTACT AGENT

MFR'S DESCRIPTION: adhesive for the bonding of glass to aluminum.
USES: adhesive applications
SPECS/FEATURES: bonding agent is a light-colored, fast-drying, synthetic rubber adhesive in a solvent base, designed specifically for adhering and sealing glass to aluminum. When dry, it is resistant to extremes of temperature, sunlight, rain and snow, and serves as a sealer and glazing material. The bonding resists shock and heavy tensile stresses. Although it forms an air-tight bond, agent re-



STOP
water for good
with
Karnak®
waterproofing
products

KARNAK Membrane Waterproofing

Here is the surest protection possible for foundations where there is hydrostatic head or danger of water seepage.

The KARNAK system bonds onto the foundation surface alternate layers of tough, open-mesh, saturated cotton cloth. The cloth is mopped with a ductile asphalt which penetrates the open mesh and interlocks the layers into a firm mechanical seal against moisture.

This is the only method of foundation waterproofing that insures proper thickness of asphalt and remains in place throughout the life of the structure. It is available with either asphalt or coal tar.

KARNAK 300 SEALANT
THIOKOL polysulfide

An elastic sealant blend of synthetic rubbers that provides a tenacious bond with all types of building materials including those of dissimilar density and texture.

Use KARNAK 300 (THIOKOL polysulfide) for all joints, horizontal or vertical, which are subject to extreme expansion and contraction. This includes those with widely differing coefficients of expansion and contraction, such as wood, aluminum, steel and concrete.

KARNAK 300 (THIOKOL polysulfide) has exceptional elasticity and resilience. Unaffected by extremes of heat or cold, it elongates or compresses with the structure's movements or distortions and without loss of a perfect bond.

Let us give you—or send you—further information on these or other KARNAK products for engineered construction.

Karnak®

Manufactured by
Lewis Asphalt Engineering Corp., 30 Church St., New York 7, N.Y.

Asphalt Emulsions • Wood Block Mastic • Asphalt Paint • Mastic Flooring • Dampproofing • Roof Coatings and Cements • Plaster Bond Cork Finish • Asphalt Aluminum Coatings • Protective Coatings • Waterproofing Asphalt • Thiokol Sealant • Waterproofing Fabric • Tile Cement

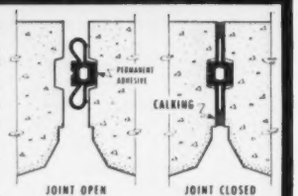
Circle 127 for further information

RUBBER or VINYL

SEALS and GASKETS

for PRECAST CONCRETE PANELS

Williams Panel Seals (Pats. Pend.) were developed especially for use in vertical and horizontal joints of precast concrete wall panels . . . they are extrusions of expanded, closed-cell Neoprene Rubber. This closed-cell material, and the hollow-core design, provide the properties which assure a positive pressure-contact seal in panel joints under all conditions—each type of seal readily compensates for variations in joint width, irregular joint surfaces and erection adjustments.



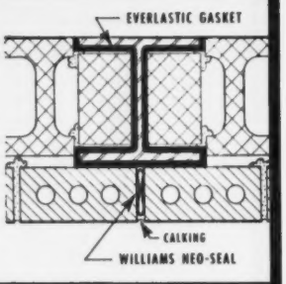
VERTICAL JOINT
3" Joint in Sculptured Precast Concrete Panel with Quartz Aggregate Face
WILLIAMS "DOUBLE-WING" SEAL No. 1A

PERFECT-SEAL for CONTROL JOINTS

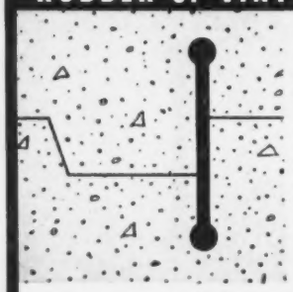
Williams "Perfect-Seal" (Pat. Pend.) is a specially designed seal for use in Mortar-Keyed Control Joints . . . it provides continuous four-point pressure-contact sealing which keeps moisture out of joints and prevents air passage. The T-Section is a high-grade rubber compound; the cross-sealing member at the base of the "T" is a strip of readily compressible, non-absorbent, expanded closed-cell Neoprene Rubber—it provides an effective pressure-contact seal directly behind the calking.

EVERLASTIC MASONRY GASKETS

Everlastic Masonry Gaskets are a readily compressible, nonabsorbent Elastomer which is impervious to water and inert to heat, cold and acids. In masonry joints, they permit linear expansion, and seal the joints against moisture penetration which causes frost damage. Everlastic Gaskets should be used between sill and coping stones, stone or prefab metal wall panels, and to isolate and cushion all steel or concrete columns to permit normal movement without damage to masonry walls.



RUBBER or VINYL WATERSTOPS



Williams Waterstops are made from Natural Rubber Stock and designed for maximum effectiveness in any type of cast-in-place construction joint. They will bend around corners, and will not crack or tear from shear action. Tensile Test: 3990 lbs., Elongation Test: 650%. Available in rolls up to 80 feet in length. Molded union and junction fittings available. Williams Waterstops can be furnished in Vinyl or Neoprene for industrial uses where resistance to oil or other injurious wastes is desirable.

See Sweet's Files, or Write for Information.

WILLIAMS SEALS and GASKETS DIVISION

WILLIAMS

EQUIPMENT and SUPPLY CO., INC.

486 W. Eight Mile Rd., Hazel Park, Michigan

Circle 128 for further information

PRODUCTS, EQUIPMENT, MATERIALS

mains permanently flexible, allowing for expansion and contraction of the bonded materials.
AIA FILE NO. 17-F/24-A
MFR: ANCHOR ADHESIVES CORP.
Circle 211 for further information

PLASTIC LAMINATE PATTERN FOR VERTICAL SURFACES

MFR'S DESCRIPTION: a new decorative high-pressure plastic laminate designed especially for vertical surfaces.
USES: lamination
SPECS/FEATURES: new thin laminate has a thickness of approximately .035". Laminate is suited for vertical applications where abuse common to horizontal surfacing is not present.
AIA FILE NO. 24-B
MFR: LAMINATED PRODUCTS DEPT., GENERAL ELECTRIC CO.
Circle 212 for further information

EPOXY RESIN SERIES PERMANENTLY FLEXIBLE

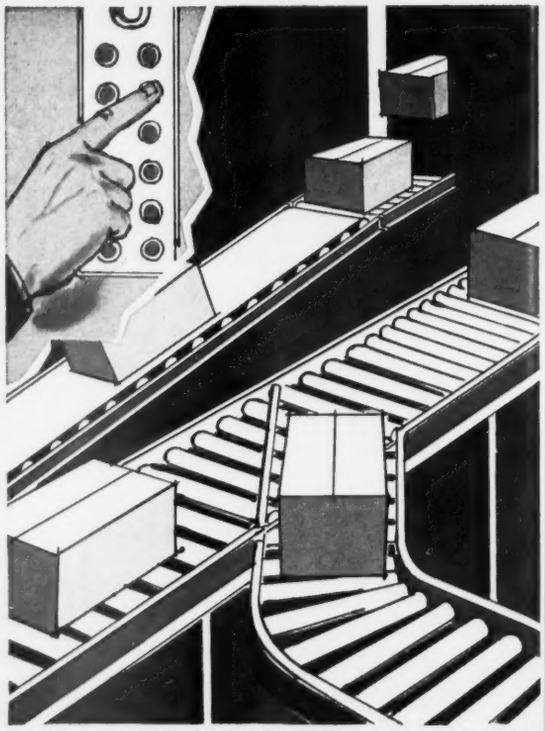
MFR'S DESCRIPTION: a series of epoxy resins.
USES: curtain-wall construction
SPECS/FEATURES: manufacturer states these epoxy resins are permanently flexible or resilient and are produced without use of plasticisors. This material is produced so that aging does not embrittle it. It is a two-component system and some of these compounds are designed to adhere to wet or submerged surfaces.
AIA FILE NO. 17-F-1
MFR: PONT DU GARD INC.
Circle 213 for further information

SPRAYED COATING FOR IRREGULAR ROOF SHAPES

MFR'S DESCRIPTION: coating composed of various plastic materials.
USES: irregular form roofs
SPECS/FEATURES: roof coating can be applied in any reasonable thickness by increasing the glass fiber content and number of coats. Thicknesses of 1/16" and 1/8" are common. A varied range of colors are available. Addition of chopped glass fibers to this type of roofing is said to increase its structural strength and bulk of coating.
AIA FILE NO. 12-A
MFR: PLY-O-GLASS CO., OF AMERICA
Circle 214 for further information

PROTECTIVE AGENT FOR MASONRY/CONCRETE

MFR'S DESCRIPTION: protective, waterproofing agent for concrete.
USES: concrete/masonry surface treatment
SPECS/FEATURES: new agent is a



CONVEYORS DO MORE JOBS WITH VERSATILE MAITROL

Conveyors almost think for themselves when they're equipped with **MAITROL***, the compatible magnetic control system.

MAITROL automatically dispatches materials. It selects and assembles items from a storage conveyor or from bulk material hoppers. It is compatible with virtually any conveyor scheme using any number of stations in any combination of vertical and horizontal applications. No wiring between stations.

MAITROL can be actuated by pushbutton, dialing, key punch or pre-set programming. MAITROL is unaffected by dirt, grease, light, temperature or electrical interference.

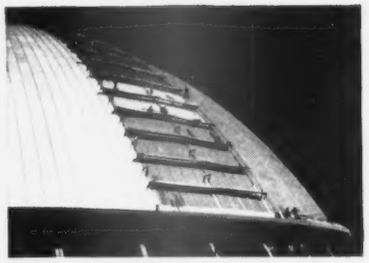
WHATEVER YOU HANDLE — mechanical parts, cartons, paperwork, mail, books, bulk materials—MAITROL may well be able to speed your operation and save you money. Why not find out?

**Registered U. S. Patent Office*

TECHNICAL INFORMATION on the **MAITROL** system is free for the asking. It shows typical uses in product assembly, order filling and paperwork distribution. Write today.

Maico electronics inc.
A SUBSIDIARY OF W. A. SHEAFFER PEN COMPANY
21 North Third Street • Minneapolis 1, Minnesota

Circle 129 for further information
Circle 131 for further information about PRESCOLITE pp 44-45



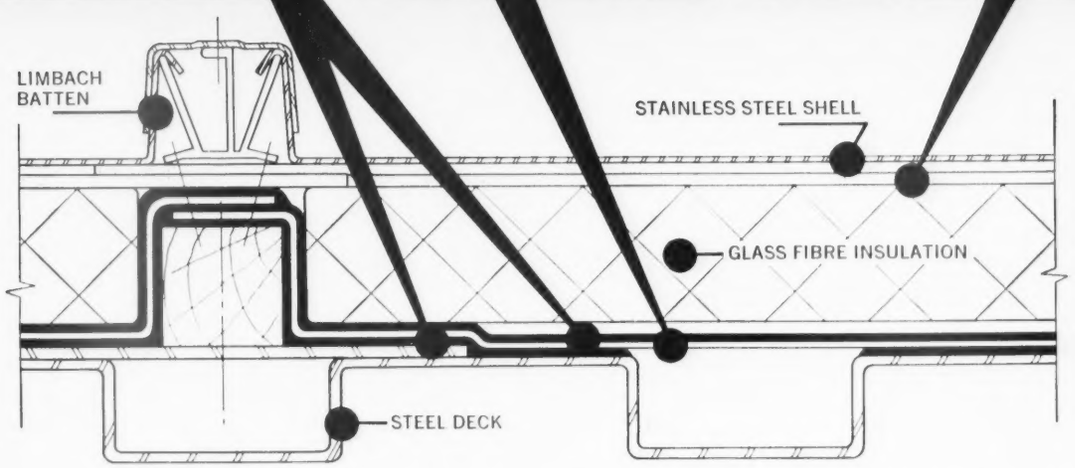
Pittsburgh Civic Auditorium—Architects: Mitchell & Ritchey. Engineers: Ammann & Whitney, H. R. Helvenston, R. A. Zern. Sheet Metal Contractors: Limbach Co.

Carey double-decker sandwich protects great Pittsburgh roll-top dome from fire and moisture vapor

FIRE-CHEX ADHESIVE #400
(non-flammable, quick-setting, rubber-based adhesive) Rolled on ribbed steel deck. Also applied on Carey Fire-Chex Vapor Barrier.

FIRE-CHEX VAPOR BARRIER
(red vinyl plastic sheet with superior fire and moisture resistance—won't support combustion) Applied over adhesive-coated ribbed deck and wood battens.

FIBEROCK 35# ROOFING FELT
Further protects roof segments. Applied over glass fibre insulation and wood battens, immediately under final stainless steel shell.

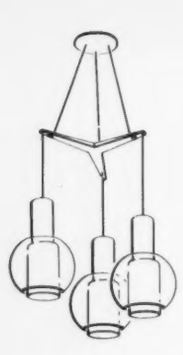


UNSEEN BENEATH THE GLEAMING STAINLESS STEEL SHELL OF THIS MAGNIFICENT STRUCTURE ARE PROTECTIVE LAYERS OF CAREY FIRE-CHEX ADHESIVE, CAREY FIRE-CHEX VAPOR BARRIER AND CAREY FIBEROCK ROOFING FELT . . . FOR FIRE RESISTANCE AND VAPOR CONTROL.

For facts on these Philip Carey roofing products, write Dept. AEN-1061 The Philip Carey Mfg. Company, Cincinnati 15, Ohio.

Carey®

Circle 130 for further information



Illus. Cat. No. **B-103-Y**
3-arm teak spreader
with three "Y" style
2-piece glass shades.

Illus. Cat. No. **B-105-U**
5-arm teak spreader
with five "U" style
glass shades.

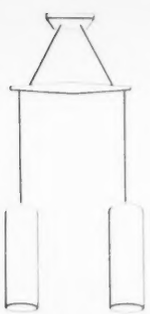
PRESCOLITE'S
EXCITING NEW

Holiday

PENDANTS

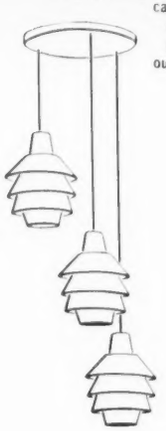
A gay and colorful grouping of pendant forms designed and executed in hand-blown combinations of colored glass as well as exquisite satin opal glass. Metal shades come in striking baked enamel finishes set off with lustrous brass accents. All shades are suspended by white plastic cords, and are designed for mounting on 3¼" or 4" outlet boxes. Teak spreaders are of pure Bangkok Teak with hand-rubbed satin cabinet finish. You can create multiple combinations of forms and colors and stagger the heights to form focal points of interest for any interior. Write for complete catalog information.

PRESCOLITE MANUFACTURING CORPORATION
2229 Fourth Street, Berkeley 10, California



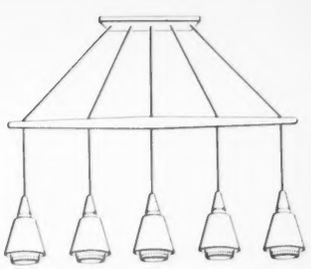
Illus. Cat. No. **S-202-O**
2-light teak spreader with two "O" style glass shades.

Illus. Cat. No. **S-203-K**
3-light teak spreader with three 2-piece "K" style shades. White satin opal inner glass, metal outer shades.



Illus. Cat. No. **C-303-J**
3-light, round, polished brass canopy with white, satin opal inner glass and 3-piece outer metal shields.

Illus. Cat. No. **A-101-F**
Single canopy, white satin opal inner glass and 2-piece outer metal shields.



Illus. Cat. No. **S-205-R**
Rectangular metal canopy, 5-light teak spreader with metal shades finished in baked enamel and polished brass.

Safe, glare-free daylighting on a budget

Notice how soft the shadows are on the walls? That's typical of light transmission through these domed Consolite fire-retardant skylights. Consolite (registered trademark) is a product of Consolidated General Products, Inc., Houston, Texas.

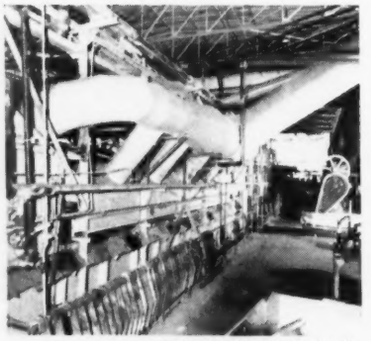
You can't see any "hot spots" under these skylights, can you?

They're made of a reinforced plastic that diffuses the light, banishes glare. Yet they transmit as much as 85% of the light that's available.

These domed plastic skylights are safer, because they can't shatter into a thousand flying fragments. Safer, too, because the plastic won't support combustion—can't feed a fire, ever. They cost less to buy and to install than conventional skylights: they're made in one piece, with integral flashing.

If you're working on plans that call for fire-retardant construction, you'll want to know more about this safer plastic and the many interesting things you can do with it. It's called Hetron.® You can get it made up into glass-reinforced corrugated sheets, flat panes, and striking textured interior panels, as well as skylights. Corrosion-resistant pipes, ducts, and process equipment, too. All are designed to meet stiffest fire codes.

We don't make these structural materials; we just supply the basic plastic, Hetron, that makes them safer. We'll be glad to send you a list of expert fabricators who can supply you. Just write us or check the reader's service card.



HEIL PROCESS EQUIPMENT CO.

Handle corrosive fumes safely in fire-retardant ducts fabricated with Hetron polyester. In plant after plant they outlast other materials, cut replacement and upkeep costs. Hetron ducts above saved **two-thirds** the cost of replacing a previous system damaged by fire; cost less to install; made sprinklers unnecessary.

DUREZ PLASTICS DIVISION

HOOKER CHEMICAL CORPORATION, 9210 WALCK RD., NORTH TONAWANDA, N. Y.

HOOKER CHEMICALS PLASTICS

Circle 132 for further information

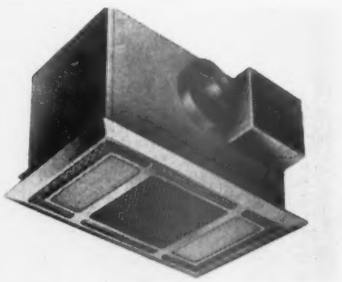
clear colorless liquid containing esters of boron and silicon in an aqueous base. Applied to masonry, manufacturer says agent is absorbed into surface, giving protection from 5 to 10 years. Treated surfaces may be painted. Agent may be applied to wet cement or concrete and to damp walls, with the same effectiveness as on dry masonry, according to manufacturer. Application of agent to concrete walls is said to protect against substantial water pressure.

AIA FILE NO. 3-B-1

MFR: INDUSTRIAL DIV., GUARDIAN CHEMICAL CORP.

Circle 215 for further information

HVAC



HEATER/VENTILATOR/LIGHT IN BATHROOM CEILING UNIT

MFR'S DESCRIPTION: one installation covers three residential bathroom requirements—light, heat and ventilation.

USES: residential

SPECS/FEATURES: instant warmth is produced by *nichrome* heating elements. Reversible fan delivers even heat in room. Overhead illumination is provided by two 60-watt bulbs. Axial flow exhaust fan ventilates room. Exhausted air is removed through standard 4" duct. Equipped with built-in back-draft damper. Wall switch and switch plate included.

AIA FILE NO. 30-C-44/30-D/31-F-23

MFR: HUNTER DIV., ROBBINS & MYERS, INC.

Circle 216 for further information

HVAC/HOT WATER UNIT IN RESIDENTIAL PACKAGE

MFR'S DESCRIPTION: heating, air conditioning and hot water, supplied in one unit.

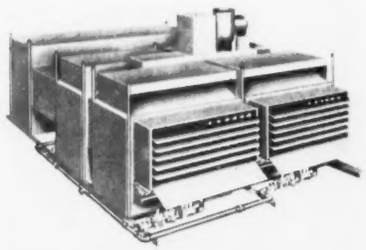
USES: residential

SPECS/FEATURES: three-in-one package accomplished by adding water heater to manufacturer's heating and air conditioning system. Heat for water is supplied from furnace bonnet through a finned coil with gravity flow into water storage tank. Heat not absorbed by water heater coil returns to furnace blower and is recirculated without loss.

AIA FILE NO. 30/29

MFR: JET-HEET, INC.

Circle 217 for further infomation



HVAC SYSTEM ASSEMBLY OF FLEXIBLE DESIGN

MFR'S DESCRIPTION: a new heater assembly which allows wide utilization of its direct-fired gas equipment in heating, heating and cooling, partial fresh air, total make-up air, processing, and similar systems.

USES: HVAC

SPECS/FEATURES: four models are available ranging in capacity from 200,000 BTU/hr to 1,400,000 BTU/hr input, and assembled in either push-through or pull-through arrangement. The particular duct furnace used in each model is flex-rated with a range between 200,000 BTU/hr and 350,000 BTU/hr input, with adjustment at the regulator providing the exact capacity required. Optional controls include combination fan and limit controls, 24-volt transformer, two-stage electric gas valve, modulating value, electric ignition assemblies, and dual fuel arrangements.

AIA FILE NO. 30-A

MFR: REZNOR MANUFACTURING CO.

Circle 218 for further information

HORIZONTAL/VERTICAL STORAGE WATER HEATERS

MFR'S DESCRIPTION: completely packaged electric storage water heaters.

USES: commercial and industrial.

SPECS/FEATURES: storage capacities range from 284 to 1300 gallons, with recovery capacities from 41 to 410 gph. Working pressures are 100, 125 or 150 psi. Immersion elements designed for 208, 220 or 240 volts. Electric and water connection only are required to place heater in operation. Heater is completely automatic and is said to operate at approximately 100% efficiency. Immersion heating elements operate at 10% below voltage capacity.

AIA FILE NO. 29-D-2

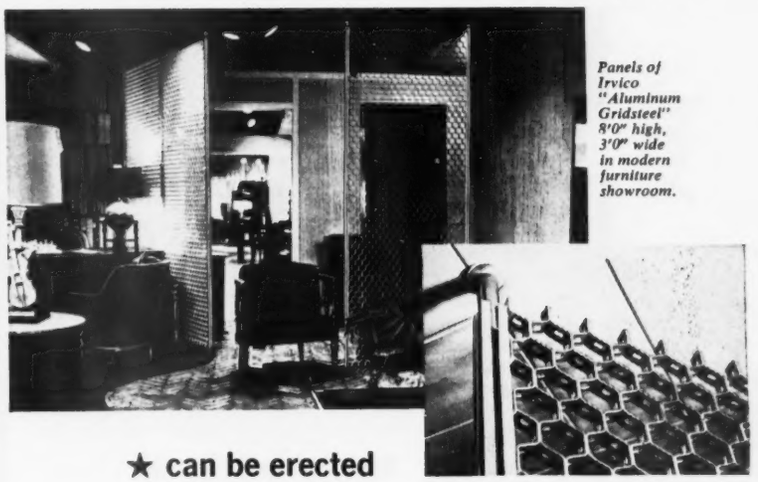
MFR: WATER HEATER DIV., PATTERSON-KELLEY CO., INC.

Circle 219 for further information

← Circle 131 for further information about PRESCOLITE pp 44-45

NEW MODULAR GRILLE SYSTEM

with "UNIPOLE" spring loaded supports,



Panels of Irvico "Aluminum Gridsteel" 8'0" high, 3'0" wide in modern furniture showroom.

★ can be erected by anyone
★ and repositioned at will
★ without leaving marred surfaces.

Irvico introduces the "UNIPOLE" Modular System to satisfy the growing popularity of open grille work for functional and decorative use by architects and interior designers.

The system saves time and cost in installation. It can be erected by anyone with a screwdriver and tape measure.

A simple pressure device between floor and ceiling permits installation or repositioning without marring surfaces. A wide range of grille types and sizes are available in colors. They can be attached to four sides of the "UNIPOLE", permitting the grille panels to radiate at 90°. They may also be arranged in a continuous run.

★
Special sized modules available.
★
Write for Unipole particulars and Ornamental Grille literature.

IRVICO®

IRVING SUBWAY GRATING CO., Inc.

ORIGINATORS OF THE GRATING INDUSTRY

Offices and Plants at
50-59 27th ST., LONG ISLAND CITY 1, N. Y.
1859 10th ST., OAKLAND 20, CALIFORNIA

Circle 133 for further information

PRODUCTS, EQUIPMENT, MATERIALS

REFRIGERATION MACHINE IN ASSEMBLED PACKAGE

MFR'S DESCRIPTION: a major advance in refrigeration equipment.

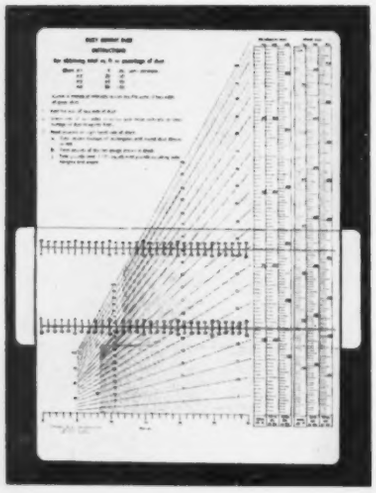
USES: commercial and industrial

SPECS/FEATURES: new compact hermetic centrifugal refrigeration machine is delivered to job site as completely assembled package. Unit features reductions in size and weight as compared with conventional centrifugal equipment. Package is intended as the heart of central station air conditioning systems. It is available in eight size increments from 50 to 100-ton nominal refrigeration capacity. The packaged design is completely piped.

AIA FILE NO. 30-F-2

MFR: INDUSTRIAL DIV., AMERICAN-STANDARD

Circle 220 for further information



HVAC DUCT WEIGHT CALCULATOR

MFR'S DESCRIPTION: calculator for computing the square footage and weight of rectangular and round ducts up to 100′ in length; to 120″ semi-perimeter.

USES: drafting room

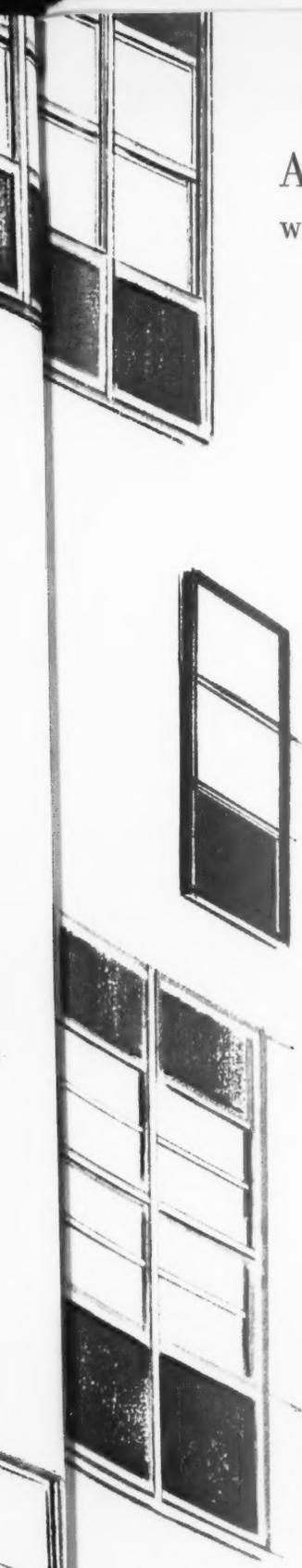
SPECS/FEATURES: calculator consists of four scales with red and black lines, on white and yellow background. When cursor is moved to a point where hair line intersects total footage line, total lbs. and sq. ft. of duct are obtained to *ASHRAE* metal ga. standards. Also included is galvanized-aluminum comparison chart, prominent sizes of angle iron weights, taping and insulation formulae.

AIA FILE NO. 35-H-3

MFR: CARL RAYMOND & CO.

Circle 221 for further information

Circle 134 for further information →



New...from CECO

Aluminum windows and curtainwalls

with double-hung, single-hung or fixed windows

At last, here's a curtainwall that permits imaginative building design—enabling the architect to create a "character unto itself" for each building. And the components are of heavier-than-average aluminum, of custom manufacture. They can be anodized in Ceco's new, large-unit Alumiliting plant, the most modern in America. They are practical and reasonably priced, made so through design engineering.

This new series (160 for double-hung windows, and 165 for single-hung) means erection speed for the architect and contractor, and minimum maintenance for the building owner. Here are some of the reasons why:

- Sleeving mullions are an integral part of each unit . . . conventional mullions are not needed. This new product permits shadow-line construction at low cost, while providing the same strength as add-on mullions. Material and labor costs are reduced. Available in large units, easy to erect.
- Double-contact weather stripping on vertical and horizontal sections of operating sash give maximum protection from air and dirt. For minimum maintenance, windows can be furnished with inside bead glazing. This facilitates replacement of broken glass . . . from inside the building.
- There are no projections with double-hung, single-hung or fixed windows. Windows of this type are ideal for ground level exteriors.
- Panels of porcelain, ceramic, plastic, steel or stone can be used in several depths without modification of the curtainwall elements, offering the architect creative freedom. This feature allows use of thin panels when back-up walls are required, and thicker panels to satisfy U values without back-up walls.
- To maintain a neat exterior face, all window frames are designed with offsets so exterior screens can be inserted flush with the surface of the curtainwall.

Use this coupon for additional information

Just Published!... descriptive folder, along with specifications and prints detailing Ceco series 160 D/H and 165 S/H aluminum and steel curtainwalls.

CECO Steel Products Corporation

5601 West 26th Street, Chicago 50, Illinois

☐ *Please send folder and prints detailing Ceco Series 160 and 165 aluminum windows and curtainwalls.*

☐ *Please have Ceco engineer get in touch with me.*

NAME _____

FIRM _____

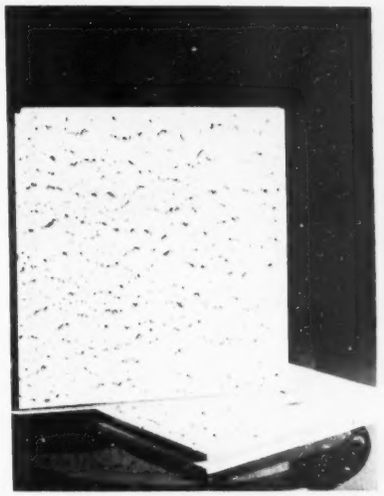
ADDRESS _____

CITY _____ ZONE _____ STATE _____

AEN

curtainwalls, windows, screens • hollow metal doors • steelforms • rebars • steel joists • steel buildings • roofing products • metal lath

Total Manufacturing for the Building Industry from Raw to Finished Products



INCOMBUSTIBLE CEILING TILE WITH EASIER INSTALLATION

MFR'S DESCRIPTION: new incombustible acoustical ceiling tile with the installation said to be as simple as wood fiber tile.

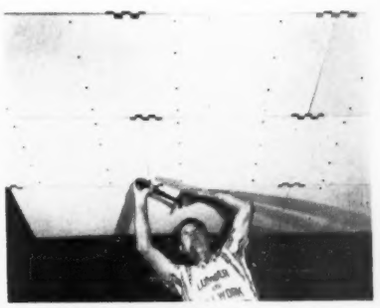
USES: residential and commercial ceilings.

SPECS/FEATURES: incombustible acoustical ceiling tile is equipped with a self-leveling tongue-and-groove joint, and can be stapled to wood furring strips or cemented to an existing ceiling in the same manner as regular wood fiber tile. Face edges of tile are square instead of beveled, and can be butted tightly together for a continuous ceiling texture with little tile effect.

AIA FILE NO. 39-B

MFR: ARMSTRONG CORK CO.

Circle 222 for further information



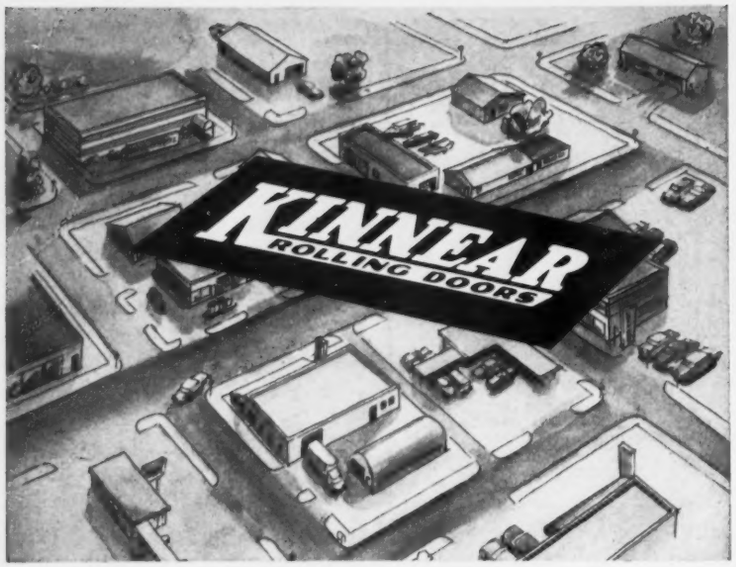
FIRE RESISTANT CEILING PANEL

MFR'S DESCRIPTION: a new type of fire resistant ceiling panel capable of protecting steel joists from heat for over 3 hours.

USES: commercial ceilings.

SPECS/FEATURES: fire resistant ceiling panel designed for installation where a fire protective ceiling is required under steel bar joists. Panels are approximately 2′ x 5′

←Circle 134 for further information



KINNEAR DOOR *Quality*
has a place in every building picture

Only four Kinnear space-saving doorway products are shown below. All reflect the *extra quality* for which Kinnear has been recognized through more than half a century. They meet *many* needs, in buildings of every classification. And Kinnear equipment is never "orphaned" . . . *all* are REGISTERED — parts are always replaceable from engineering details kept in Kinnear's *fireproof vaults!* It pays to insist on *Kinnear!*

SEND FOR NEW DATA —
Be sure you have all data on the **complete** Kinnear line — upward-acting sectional doors (steel or wood) . . . protective "see-through" rolling grilles . . . interlocking-slat counter shutters and service doors (aluminum, steel or other metals) . . . Kinnear Power Operators — also U-L labeled fire doors, Bi-fold (two-section jack-knife) doors! Lots of useful "specs". Send for FREE copy today.

The KINNEAR Manufacturing Co. Factories: 1240-60 Fields Ave., Columbus 16, Ohio; 1742 Yosemite Ave., San Francisco 24, Calif.
Offices and Agents in All Principal Cities

Circle 135 for further information

PRODUCTS, EQUIPMENT, MATERIALS

in size and can be fastened to standard type nailing channels with annular ring nails. End joints are reinforced with steel bridging clips.
AIA FILE NO. 17-A
MFR: ARMSTRONG CORK CO.
Circle 223 for further information

COILING PARTITIONS WITH SOUND CONTROL

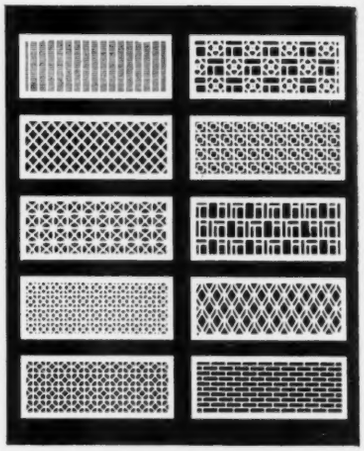
MFR'S DESCRIPTION: solid wood or laminated plastic permanent finishes in automatic or manual operator types for rapid motion.
USES: commercial and institutional
SPECS/FEATURES: closing joined wood slats with 1" air space between twin units. Self storing in own coiling box. Partition can be furnished with or without floor guide depending on maximum sound reduction requirement. Laminated plastic finishes with satin finishes in a varied range of wood grains, patterns or colors. Available in special or standard heights of 9', 10' and 12' with opening lengths as required.
AIA FILE NO. 35-H-6
MFR: DUBUQUE PRODUCTS, INC.
Circle 224 for further information

VINYL PLASTIC/WOOD IN FLOORING TILE

MFR'S DESCRIPTION: flooring tile combining natural wood and heavy-gauge vinyl plastic.
USES: flooring
SPECS/FEATURES: 9"x9" tile consists of an aluminum foil core between two layers of hardwood veneer with a 12 ga. clear vinyl film on top surface and an 8 ga. vinyl film on the bottom. Tile is backed with a neoprene-saturated asbestos sheet. Four woods available: walnut, cherry, oak and mahogany. Other woods available on request.
AIA FILE NO. 23-G
MFR: WILCOX-WOOLFORD CORP.
Circle 225 for further information

COMPLETE WALL SECTIONS END STUD FRAMING

MFR'S DESCRIPTION: two-faced panels quickly form complete walls without framing, and are said to help cut interior wall costs by as much as 20%.
USES: wall construction
SPECS/FEATURES: a new wall panel with a honeycomb core is faced on both sides with gypsum wallboard. New panels form complete wall sections without need for conventional stud framing, according to manufacturer. To place panels, a bottom plate is first nailed to floor and a corresponding top plate nailed to ceiling rafters. Panels are then



Why Buyers Buy Hendrick Grilles

For well over 80 years the metal-working industry has relied on Hendrick for its perforated metal requirements. And with good reason! Hendrick perforated metal combines decorative beauty with the functional strength so often called for on new product specifications. Hendrick's vast stock of dies includes over 100 unusual patterns that are exclusive and only obtainable from the Hendrick Manufacturing Company.

Hendrick perforated plate is available in every type of commercially rolled metal in gauges and sizes of perforations to meet your exact specifications. For more information call your nearby Hendrick sales office.

Steel

PERFORATED METAL • PERFORATED METAL SCREENS • WEDGE SLOT AND HENDRICK WEDGE WIRE SCREENS • ARCHITECTURAL GRILLES • MITCO OPEN STEEL FLOORING • SHUR-SITE TREADS ARMORGRIDS • HENDRICK HYDRO DEHAZER

HENDRICK
Manufacturing Company
Carbondale, Pa.

Circle 136 for further information

placed in position and attached to plates. Hollow metal splines at panel joints hold panels in alignment and provide raceways for electrical conduit from ceiling to floor. No special framing required at door openings.
AIA FILE NO. 17-A
MFR: HOFFMAN INDUSTRIES, INC.
Circle 226 for further information

LIGHTING

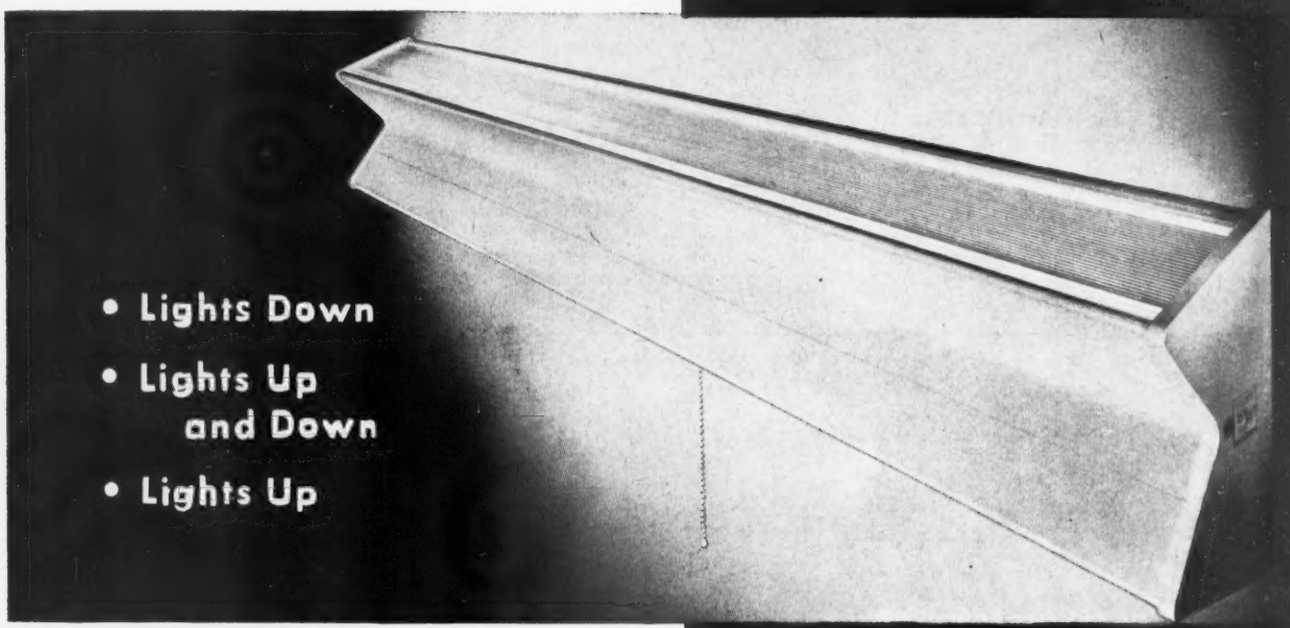
OUTDOOR LIGHTING IN CAST ALUMINUM
MFR'S DESCRIPTION: lamp in a new series of cast aluminum outdoor lighting units.
USES: residential and commercial
SPECS/FEATURES: globe of lamp is 12" in diameter and 15" high. Fits a 3" diameter post and should be used with 150 watt bulb. Component parts are made in one piece to help assure protection against the elements. Textured finish available in black or white; clear or pebble glass.
AIA FILE NO. 31-F-22
MFR: GLOBE LIGHTING PRODUCTS, INC.
Circle 227 for further information

LARGEST/MOST POWERFUL FLOODLIGHTING LAMP
MFR'S DESCRIPTION: largest and most

Circle 155 for further information →

miller

MULTI-PURPOSE WALL LIGHT



Here's a new fluorescent fixture that offers the ideal solution to many special, wall mounting lighting applications. Switched units provide a choice of *up-light*, *down-light* or both *up* and *down* light depending on the lighting need.

When *up-light* and *down-light* are used together, you get a desirable balance of direct light for reading, writing or working, with soft, comfortable general room illumination.

Ideal for lighting the areas illustrated—as well as for private offices, lounges, apparel fitting rooms and similar locations. Equally desirable for new buildings or modernization of older areas. Comes in 2, 3 and 4 foot lengths for individual or continuous wall mounting.

Premium quality *acrylic refractors at no premium in price*, softly diffuse the light—will never discolor. All switched units are equipped with a convenient, built-in electric outlet. A built-in night light is optional. Easy to relamp and clean.

For complete catalog information, write Department 1061 or contact your Miller Representative.

THE **miller** COMPANY
MERIDEN, CONNECTICUT • UTICA, OHIO

PRODUCTS, EQUIPMENT, MATERIALS

powerful light source for general floodlighting purposes.

USES: floodlighting large areas

SPECS/FEATURES: lamp is a 6000-watt combined mercury-fluorescent tubular light source, 5′ long and 4″ in diameter. A mercury arc tube, 1″ in diameter extends the length of the lamp. Lamp produces 330,000 lumens with an operating life of about 4,000 hours. Even though both glass tube and phosphor are heat resistant, lamp must be protected from the elements. Blower cooling is expected to help maintain lamp's temperature below 700° F. Lamp weighs 6½ lbs., and straps are required to support it in a fixture. Designed to operate in a horizontal position.

AIA FILE NO. 31-F-26

MFR: GENERAL ELECTRIC CO.

Circle 228 for further information

SQUARE FLUORESCENT LAMP IN TWO NEW DESIGNS

MFR'S DESCRIPTION: a new line of square fluorescent lamps.

USES: illumination

SPECS/FEATURES: of the two designs, one has a waffle shape in front; the other shows the labyrinthine path of the current forming the discharge causing fluorescent light. Both types are 9″ sq. and will fit into all existing 9″ recessed incandescent fixtures, requiring only an instant starting ballast. Design life is 10,000 hours. Lamp is less than 2″ thick.

AIA FILE NO. 31-F-21

MFR: EL-TRONICS, INC.

Circle 229 for further information

FLEXIBLE EPOXY BONDS METAL TO METAL

MFR'S DESCRIPTION: two-part thermosetting epoxy resin.

USES: bonding metal to metal.

SPECS/FEATURES: manufacturer claims an equal weight blend of epoxy resin and its catalyst provides a strong, flexible adhesive highly resistant to impact. Curing schedule will vary depending on nature of materials being bonded, thickness of bond line, temperature, etc., but usually assembly can be moved in 1½ to 2 hours, and complete cure occurs in 24 to 48 hours at room temperature.

AIA FILE NO. 24-A

MFR: MIRACLE ADHESIVE CORP.

Circle 230 for further information

FIBERGLASS PANELING WITH ACCESSORIES

MFR'S DESCRIPTION: a new major line of fiberglass paneling and accessories.

USES: general construction.

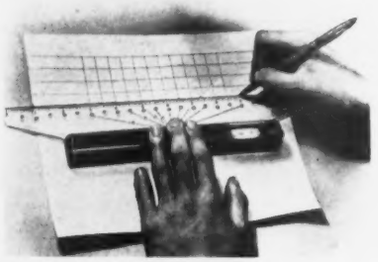
SPECS/FEATURES: a major wood products manufacturer has recently begun producing fiberglass paneling and accessory items. The new fiberglass panels come in three grades: superior, structural and economy.

AIA FILE NO. 17/24

MFR: U. S. PLYWOOD CORP.

Circle 231 for further information

OFFICE AIDS



DRAFTING TOOL WITH VARIED USES

MFR'S DESCRIPTION: a plastic 12″ combination triangle, T square and parallel ruler.

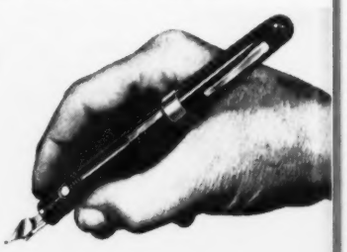
USES: drafting

SPECS/FEATURES: tool for drawing vertical, horizontal, and parallel angular lines in automatically measured distances at greater speed. A built-in roller allows easy movement up or down over paper when drawing lines. Index window automatically indicates distances between horizontal and angular lines as close as 1/16″. Lines can be spaced at regular, or varied distances. Vertical lines are made by placing ball point or pencil in any hole and rolling ruler up and down. Circles and arcs can be scribed up to a diameter of 22″.

AIA FILE NO. 35-H-3

MFR: ROL-RULER CO.

Circle 232 for further information



DRAFTING/WRITING PEN WITH PUSH-BUTTON FEED

MFR'S DESCRIPTION: new automatic feed pen holder.

USES: drafting rooms

SPECS/FEATURES: pen fills like a fountain pen with India ink or colors. All regular *Speedball* pens fit it. Pen has pushbutton feed for uninterrupted speed writing and precision.

AIA FILE NO. 35-H-3

MFR: C. HOWARD HUNT PEN CO.

Circle 233 for further information

DRAWING POINT SECTIONS FOR TECHNICAL PENS

MFR'S DESCRIPTION: individually interchangeable drawing point sections in various sets.

USES: drafting

SPECS/FEATURES: sets are individually color-coded for quick identification of different point sizes. Designed for the architect who requires frequent change of line widths, the point sections are non-clogging and easily cleaned. Each of the 7 sizes of drawing point sections has an airtight, individually attached, self-contained re-useable ink cartridge which can be easily filled.

AIA FILE NO. 35-H-3

MFR: KOH-I-NOOR, INC.

Circle 234 for further information

MISCELLANY

INSULATION SYSTEM WITH SHEET-METAL FACE

MFR'S DESCRIPTION: insulation system combines insulation material with a diamond-rib sheet aluminum facing.

USES: applying sheet insulation where weather-resistant facing is required.

SPECS/FEATURES: panels consist of insulation, factory assembled with an aluminum facing. It is supplied in sheets about 50″ wide by 100′ long designed to provide a net insulation coverage of 4′x8′, when applied with recommended overlap. Panels are fastened to metal surfaces using threaded studs welded to surface to be insulated. Panels are predrilled for studs, which are sup-

FOUR DISTINCTIVE HAWS FOUNTAINS
SMARTLY STYLED IN VITREOUS CHINA

HAWS

"The Series 60"...refreshing new styling with the durable beauty of gleaming vitreous china, permanently in good taste. All are wall-hung models, based on the same appealing design. Choose the model that best fits your plans...or choose several to complement each other in varied locations. Sanitation? Only HAWS has the exclusive M fountain head...raised, shielded, anti-squirt angle stream. Automatic flow control, too. Get detailed specs from HAWS. Write today.

Model 62-GF: HAWS glass filler faucet installed on back of Model 62, for double-duty convenience.

Ask for your free copy of the new HAWS Catalog.

HAWS DRINKING FAUCET COMPANY
1441 FOURTH STREET (Since 1909) BERKELEY 10, CALIFORNIA

Circle 138 for further information

PRODUCTS, EQUIPMENT, MATERIALS

plied with system, along with fastening nuts, and washers. Insulation sheets can be cut and drilled, as necessary.

AIA FILE NO. 37-C

MFR: INSULATION DIV., JOHNS-MANVILLE CORP.

Circle 235 for further information

LUXURY CHAISE LONGUE FOR INDOOR/OUTDOOR USE

MFR'S DESCRIPTION: luxury chaise longue with wire-formed frame.

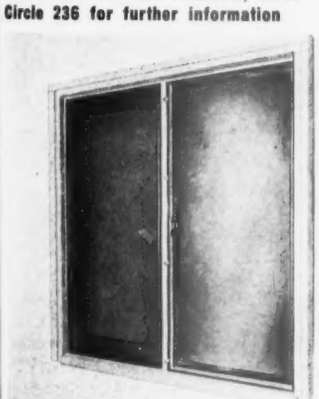
USES: indoor/outdoor

SPECS/FEATURES: shaped like a shallow basket, wire-formed frame has 2" high sides which hold the cushions firmly in place without ties or hooks. Back of chaise adjust from flat to upright, with six intervening positions. Chaise is coordinated with manufacturer's line of wire-formed chairs.

AIA FILE NO. 28-A-2

MFR: KNOLL ASSOCIATES, INC.

Circle 236 for further information



NEW SLIDING WINDOW UNIT

MFR'S DESCRIPTION: new window is a complete, assembled unit with outside casing applied.

USES: residential

SPECS/FEATURES: one side of window unit is equipped with a fixed pane of glass; the other is an operative sliding, removable sash. Horizontal track at top and bottom has a double bead to give extra resistance to air infiltration. Screens and storm panels

Circle 139 for further information →

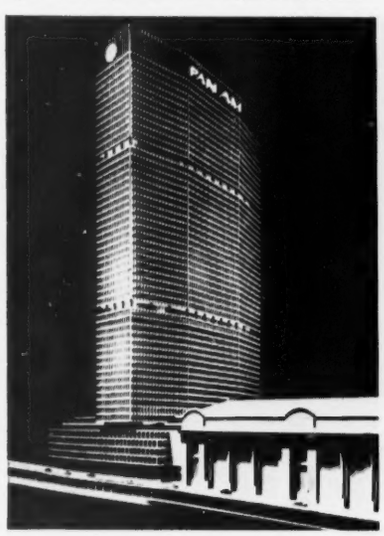
PHOTO QUIZ: What do these major, high-rise buildings have in common?

Helpful hints: They aren't all architectural award winners (though some are). They were not designed by the same architect. They are not located in the same city, but across America, from Boston to San Francisco. Yet they share one major element in common. (For answer, see bottom of page.)

1 The International Building, San Francisco, California
Architects: Anshen & Allen

2 Atlanta Merchandise Mart, Atlanta, Georgia
Architect: Edwards and Portman, AIA

3 Blue Cross Blue Shield Office Building, Boston, Massachusetts
Architects: Anderson, Beckwith & Haible and Paul Rudolph



4 The Pan Am Building, New York, N. Y.
Architects: Emery Roth & Sons, Walter Gropius and Pietro Belluschi

5 The Denver Hilton Hotel, Denver, Colorado
Architect: I. M. Pei & Associates

6 Michigan Consolidated Gas Company Office Building, Detroit, Michigan
Minoru Yamasaki Smith, Hinchman & Grylls, Associated Architects and Engineers

The answer:

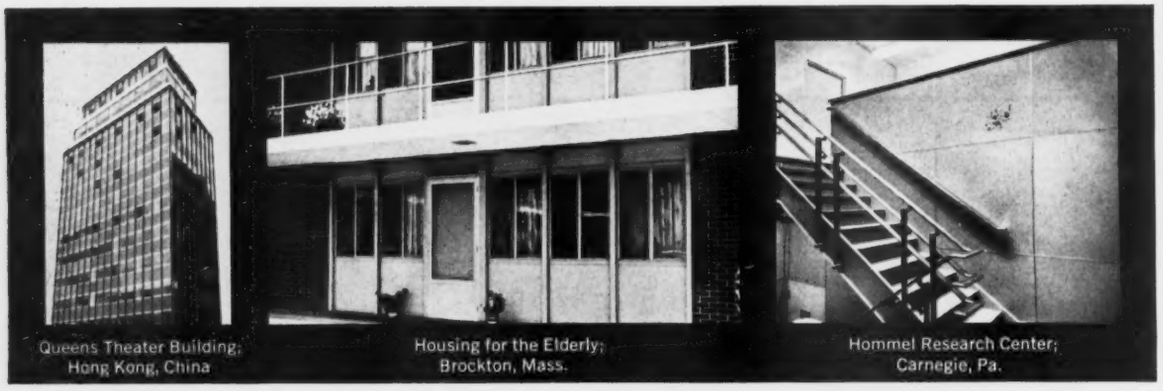
Mo-Sai!® **PRECAST CONCRETE CURTAIN WALL** is used on all of these buildings. Texture and tone as well as panel size and shape can be infinitely varied in versatile Mo-Sai. Rigid insulation can be sandwiched in the Mo-Sai panel, or used as back-up. Sills, soffits, corner returns, and special decorative effects also can be cast right in the panel. Regular Mo-Sai is heavily reinforced to high strength standards, but the panels can also be prestressed where required. The Mo-Sai units are factory-made to high Mo-Sai Institute standards. This all adds up to a highly versatile and economical curtain wall package. Design details and cost estimates available on request from any Mo-Sai Institute member, or write to the address below.

MO-SAI INSTITUTE, INC. P. O. BOX 45, STATION A, NEW HAVEN, CONNECTICUT • BADGER CONCRETE CO., OSHKOSH, WISCONSIN • BUEHNER AND CO., INC., MESA, ARIZONA
CAMBRIDGE CEMENT STONE COMPANY, ALLSTON 34, MASSACHUSETTS • ECONOMY CAST STONE CO., RICHMOND 7, VIRGINIA • GEORGE RACKLE & SONS CO., CLEVELAND 5, OHIO • GOODSTONE MFG. CO., ROCHESTER 21, NEW YORK • HARTER MARBLECRETE STONE CO., OKLAHOMA CITY, OKLAHOMA • OLYMPIAN STONE CO., INC., SEATTLE 7, WASHINGTON • OTTO BUEHNER & CO., SALT LAKE CITY 6, UTAH • P. GRASSI AMERICAN TERRAZZO CO., SOUTH SAN FRANCISCO, CALIFORNIA • SOUTHERN CAST STONE, INC., KNOXVILLE, TENNESSEE • SUPERCRETE, LIMITED, MANITOBA, CANADA • TEXCRETE MOSAIC CO., DALLAS 22, TEXAS • THE DEXTONE CO., INC., NEW HAVEN 3, CONNECTICUT • THE MABIE BELL CO., GREENSBORO, N. C.—MIAMI 47, FLORIDA—PEACHTREE CITY, GEORGIA • THE RACKLE CO., HOUSTON 20, TEXAS—ALBUQUERQUE 22, NEW MEXICO
TORONTO CAST STONE CO., LTD., TORONTO, ONTARIO • WALLS PRECAST CONCRETE CORP., LOS ANGELES, CALIFORNIA • WILSON CONCRETE CO., OMAHA 7, NEBRASKA

Arlington Arms Motel; Columbus, Ohio

PORCELAIN ENAMEL
AllianceWall
ON ALUMINUM OR STEEL

PANELS TO SATISFY EVERY NEED!


Queens Theater Building; Hong Kong, China

Housing for the Elderly; Brockton, Mass.

Hommel Research Center; Carnegie, Pa.

■ With AllianceWall building panels you receive all the benefits of porcelain enamel–weather resistance, colorfastness, mechanical resistance, moisture protection, chemical resistance, versatility and self-cleaning action. ■ And, AllianceWall's 26-plus years of porcelain enamel experience assure you added benefits–low cost; a variety of cores; durability; permanent, weather-resistant colors; chip, crack and craze-resistance; easy installation; quality control; uniform colors; and fastest delivery. ■ Whatever your requirement–outside as facing materials, window walls, spandrel treatments or accent panels . . . or inside walls, counters, cases or partitions–you owe it to your customers to specify the very best . . . AllianceWall! ■ Write direct for full details on AllianceWall Insulated Sandwich Panels, Laminated Panels and new Roll-Lock Panels.

INSULATED SANDWICH PANELS
A) Porcelain enameled metal exterior skin, B) Neoprene base adhesive, C) Hardboard or cement asbestos stabilizing core, D) Insulating Core, E) Porcelain enameled metal interior skin

VENEER PANELS
A) Porcelain enameled metal exterior skin, B) Neoprene base adhesive, C) Hardboard or cement asbestos stabilizing core, D) Porcelain enameled metal interior skin. NOTE: Interior Panel backed with aluminum foil vapor

ROLL-LOCK PANELS
A) Porcelain enameled metal exterior skin, B) Neoprene base adhesive, C) Hardboard or cement asbestos stabilizing core, D) Galvanized steel or aluminum foil, E) Loose blanket or board insulation, F) Galvanized steel back

AllianceWall
AllianceWare, Alliance, Ohio
A DIVISION OF CRANE CO.

Circle 140 for further information

PRODUCTS, EQUIPMENT, MATERIALS

are available as accessories. Sash lock is included and installed on unit. Window available in 16 sizes starting with 16″ glass and increasing in 4″ widths through 28″. Height starts at 20″ and rises by 8″ increments through 36″ and by 6″ increments through 42″.

AIA FILE NO. 16-E

MFR: CARADCO, INC.

Circle 237 for further information

RIGID URETHANE FOAM INSULATION MATERIAL

MFR'S DESCRIPTION: insulation material combines insulating characteristics with high heat, solvent and moisture resistance.

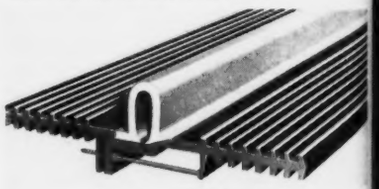
USES: wall and roof insulation

SPECS/FEATURES: material is a rigid cellular urethane foam containing more than 90% closed cells and offering good sound absorption. Foam is supplied in either white or brown, fire-retardant or non-fire-retardant. Installation can be accomplished with hammer and nails, with Portland cement, or with standard mastics.

AIA FILE NO. 37-C

MFR: H. E. WERNER, INC.

Circle 238 for further information



CONCRETE WATERSTOP WITH NEW DESIGN

MFR'S DESCRIPTION: waterstop specifically designed to eliminate splitting concrete form during installation.

USES: concrete construction

SPECS/FEATURES: waterstop is extruded with a special nailing tab, pre-punched on 6″ centers, which is nailed to concrete form with double-head nails. A supply of these nails is furnished. Manufacturer reports that waterstop is designed to handle expansion without stretching material or stressing the multiple rib area. This is accomplished with use of a U-Bulb center area design. The rigid ribs will not compress, shear off or pull out, it is said.

AIA FILE NO. 4-D-21

MFR: W. R. MEADOWS, INC.

Circle 239 for further information

NO-OVERSPRAY PAINT FOR HIGH STRUCTURES

MFR'S DESCRIPTION: paint for metal surfaces on high structures.

USES: protective metal painting

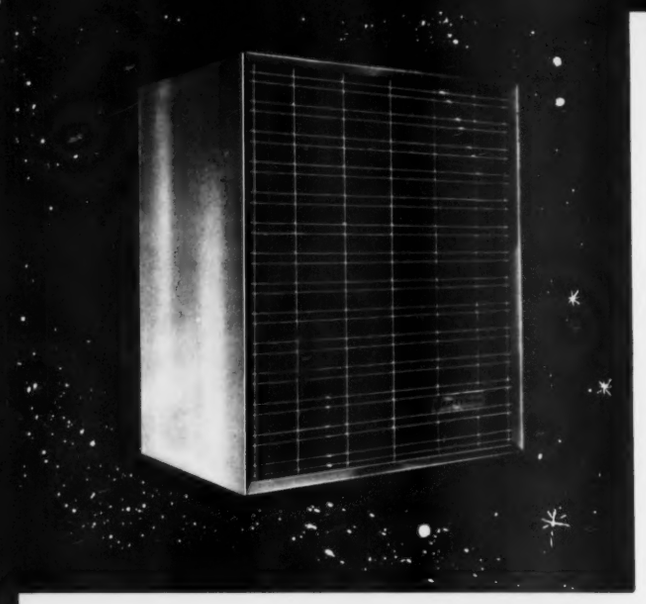
SPECS/FEATURES: metal coating

Circle 141 for further information about JANITROL →

presents a dramatically new achievement...

67 SERIES

UNPRECEDENTED STYLING, PERFORMANCE AND DURABILITY TO MEET THE MODERN TREND IN ARCHITECTURAL DESIGN



provide the ultimate in quality and economy

new JANITROL GAS-FIRED

commercial & industrial heating equipment

ALL NEW! JANITROL 67 SERIES UNIT HEATERS FEATURING. . . STELLAR NEW STYLING, PERFORMANCE AND DURABILITY!

New Janitrol 67 Series Unit Heaters are unusually handsome . . . incredibly quiet and efficient. They bring you, for the first time in unit heater history, distinctive appearance you can recommend for the smartest business setting. And they offer in even greater measure the traditional Janitrol quality and dependability in heating.

Their clean, crisp "look" is a departure from the crude, cumbersome industrial appearance of yesterday. Modern machine tools, trucks and structures have evolved as attractive, functional designs. And now, Janitrol sets the pace in unit heater styling!

The draft hood opening and adjustable louvers are concealed by the beautifully styled gold-tone grille. The rear combustion air inlet permits use of a solid bottom panel . . . eliminates any possibility of obstruction to combustion air intake.

Inside, design progress is equally significant. Yet every part is proven . . . every safety feature is included. Result? Performance no other unit heater can duplicate.

Naturally, the "heating heart" of every new Janitrol is the famous Janitrol Multi-Thermex heat exchanger with this unchallenged record for durability and low maintenance: among nearly three million heat exchanger tubes produced since 1940, replacements for all causes have run less than ¼ of 1%.

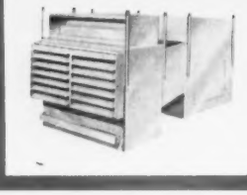
Investigate the many exclusive advantages of Janitrol 67 Series Unit Heaters for jobs you specify or install. Let them help build your reputation for quality.

FEATURES THAT MAKE ALL OTHER UNIT HEATERS OLD-FASHIONED!

New "sheer look" styling—Beautiful Phoenix Beige finish • New gold-tone grille. Conceals louvers and draft hood opening • Low overall height • Automatic controls—Fully accessible • Factory-fired • Low Voltage Gas Controls—Standard • Low Voltage Sensitive Thermostat—Standard • Limit control—interrupts control circuits and shuts off fuel if unit temperature becomes excessive • Thermopilot Shut-off. Shuts off all gas, including pilot, in event of pilot flame failure • Automatic Pilot. Exclusive Janitrol low Btu. non-linting design • Quiet air delivery. Acceptable for schools and other applications where conventional units are too noisy • Motor prelubricated for 5 years • Built-in Draft Hood. Removable, provides full access to heat exchanger. Protects burners from abnormal up or down draft • Combustion air inlet. At bottom rear, through control enclosure. Controls constantly cooled by combustion air stream. Eliminates cross draft on burners • Ampli-Fire Ribbon Flame Burners. No flame contact on metal. Removable, with non-linting air shutters featuring thumb-screw adjustment. Eleven models from 30,000 to 250,000 Btu/hr.

MEET EVERY COMMERCIAL AND INDUSTRIAL HEATING NEED FROM JANITROL'S BROAD LINE

GAS-FIRED DUCT-FURNACES
Install in a duct where air is circulated by separate blower. Adaptable for use with cooling. Two sizes: 200,000 and 300,000 Btu/hr. input—may be combined to provide capacity from 200,000 Btu/hr. up, in increments of 100,000 Btu/hr. input. Six sizes, from 50,000 to 225,000 Btu/hr. in Duct 55 models.



BLOWER-TYPE UNIT HEATER
Allows air delivery from greater heights and against greater static pressures. Models with exposed or enclosed blowers. A.G.A. approved as low and high static-type blower unit heater for air delivery to duct system up to 1.0 in. W.C. external static. Heat sections factory assembled. Sizes: 300,000, 400,000 and 500,000 Btu/hr. input.

FLOOR-TYPE UNIT HEATER
Cold air drawn from floor level is heated, filtered and discharged horizontally overhead. Quiet, clean, carefree—ideal for offices, restaurants, stores, labs, etc., requiring a compact unit.

HEAVY DUTY BLOWER HEATERS
For unit heating, central heating and air conditioning. Wide range of standard blowers and motors assures correct air delivery and temperature rise in each application. Factory assembled and tested. Capacities from 250,000 Btu to 1,750,000 Btu/hr. input.

HORIZONTAL OIL UNIT HEATER
For suspension overhead. Saves floor space. Compact, efficient, low maintenance design clean and quiet in operation. May also be used to feed duct system. Choice of sizes from 84,000 to 250,000 Btu/hr output to meet all needs.

helpful data for
ARCHITECTS, CONTRACTORS AND ENGINEERS
write today for complete information on Janitrol units for heating with clean, economical gas in buildings of every type. There's no obligation.

JANITROL HEATING AND AIR CONDITIONING
A Division of Midland-Ross Corporation
Columbus 16, Ohio • In Canada: Moffats Ltd., Toronto 15

Also Makers of Surface Industrial Furnaces, Kathabar Humidity Conditioning, Janitrol Residential Heating and Cooling Equipment.

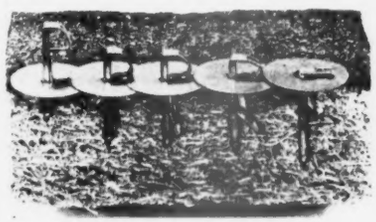
PRODUCTS, EQUIPMENT, MATERIALS

which must be spray-applied due to fast drying rate. Coating precludes property damage claims from areas adjacent to high structure paint jobs by drying completely to form a non-adhesive powder in a 20′ free fall at 60° F. Available in white and three other colors. Coating will give a 1 mil dry film deposit at an application rate of 750 sq. ft. per gal., manufacturer says.

AIA FILE NO. 25-C-3

MFR: WILBUR & WILLIAMS CO., INC.

Circle 240 for further information



ROOFING NAIL LOCKS-IN LOW-DENSITY DECKS

MFR'S DESCRIPTION: roofing nails which automatically lock-in low-density decks.

USES: securing roof decks

SPECS/FEATURES: a 1½" self-locking fastener develops immediate high holding power when attaching roofing base sheets to *Insulrock, Tectum,* poured gypsum and many other precast and poured low-density roof decks.

AIA FILE NO. 27-A

MFR: ES/PRODUCTS, INC.

Circle 241 for further information

24 GAUGE CHALKBOARD OF PORCELAIN ENAMEL

MFR'S DESCRIPTION: lightweight chalkboard with new features.

USES: institutional

SPECS/FEATURES: new boards are said to have greater scratch resistance and easier erasing qualities. New suede-like surface helps make boards easier to write on. Ghosting and chalk traps are eliminated. Boards will not discolor and come in a variety of backing materials including foil backed Masonite, exterior grade plywood with aluminum backing and Insulite. Colors available are: blue, gray, tan and two shades of green. Sizes range from 36" to 48" heights and in various lengths up to 144". Boards are guaranteed for the life of the building.

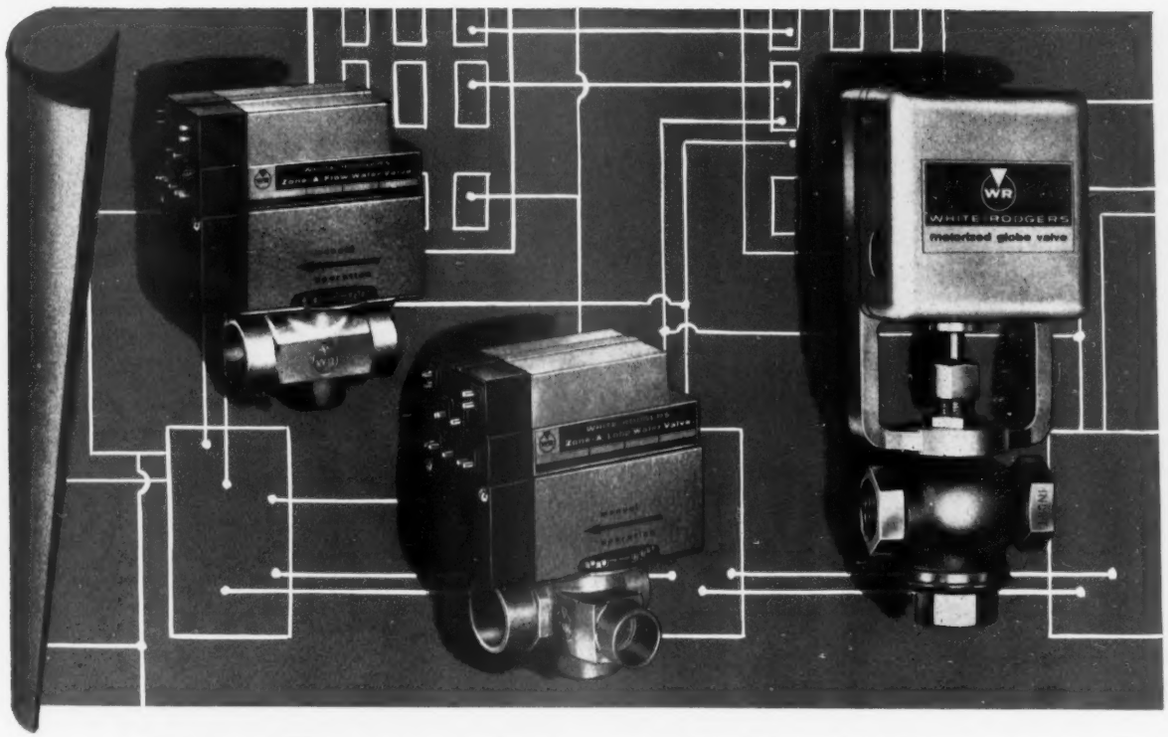
AIA FILE NO. 35-B-1

MFR: BENJAMIN DIV., THOMAS INDUSTRIES, INC.

Circle 242 for further information

← Circle 141 for further information about JANITROL

END STICKING, LEAKING, NOISY OPERATION!



NEW ZONE VALVES

WITH THE GUTS AND POWER FOR TROUBLE-FREE HYDRONIC ZONE CONTROL IN ANY JOB YOU TACKLE, BIG OR SMALL!

NOW—White-Rodgers offers wet heat contractors a *full line* of *perfect performance* motorized valves for economical zone control of homes, motels, commercial and industrial construction or conversion! New zone valves, at left and center above, are unmatched for systems with maximum pressures up to 50 P.S.I. Rugged globe valve, at right above, handles systems up to 150 P.S.I. With these W-R valves, you can tackle *any* zoning job with confidence.

OUTSTANDING FEATURES OF SERIES 1300 ZONE VALVES

- Straight-Thru or Diverting Types For 2-Wire or 3-Wire Thermostats
- Exceptionally Powerful Motor Super-Tough Gear Train
- Silent! Sealed in Oil
- Speedy "Push-In" Wiring Panel
- Visible Manual Operator Self-Aligning Barrel-Type Stem

OUTSTANDING FEATURES OF SERIES 3500 GLOBE VALVES

- Choice of 2 Timings, 3 Voltages Very High Pressure Rating
- Compact Size for "Tight Space" Mounting
- Disc Wear Automatically Compensated
- Lifetime Lubricated For Water, Steam, Oil, Gas or Air

SEE YOUR W-R WHOLESALER TODAY . . . SEND COUPON FOR MORE ZONE VALVE INFORMATION

WHITE-RODGERS

ST. LOUIS 23, MISSOURI

TORONTO 8, CANADA

WHITE-RODGERS CO., DEPT. 428
9797 Reavis Rd., St. Louis 23, Mo.

- ☐ Send me more information on Series 1300 Zone Valves
- ☐ Send me more information on Series 3500 Globe Valves
- ☐ Send me current list of full-stock W-R Wholesalers

NAME _____

FIRM NAME _____

STREET ADDRESS _____

CITY _____

Circle 142 for further information

A beauty to behold... mar-resistant vinyl clad steel... Silver Spice color... brilliant anodized aluminum grille.

Mounts flush to wall, off-the-floor at any height for easy cleaning. Conceals all plumbing. High anti-splash shield. Gleaming, hand polished, stainless steel top whisks clean in seconds.

Proven superior. Greater efficiency and better performance than central cooling systems. Precision engineered for trouble-free service and long life. Two capacities: 7 and 13 GPH.

Full 5-year Ebco warranty covers all parts. Best warranty in the industry.

WRITE FOR FREE VINYL SAMPLE. Vinyl laminated steel swatch in Silver Spice color available on request. Write: The Ebco Mfg. Co., Dept. I-Y, Columbus 13, Ohio. (See Sweet's A.I.A. File No. 29-D-42)

oasis
America's Preferred
WATER COOLERS
BY THE EBCO MANUFACTURING COMPANY

Circle 143 for further information

talk about lip service..

New Hartman RETRACT-O-MATIC Dock

has 4-way lip action to handle any truck or load.

FIRST LOW-COST DOCK with lip that extends up to 24" . . . in addition to raising or lowering with deck. Truck may be positioned anytime, day or night. Dock operator services it at his convenience. SIMPLY INSTALLED – Supplied completely self-contained, ready to drop in place and lag to floor. Pit easily constructed – complete details furnished. Specify the Hartman RETRACT-O-MATIC Dock.

SPECIFICATIONS AND INSTALLATION INSTRUCTIONS available — Write for them!

Hartman
METAL FABRICATORS, INC.
1452 Main St., Waterloo, N.Y.

Circle 144 for further information

PRODUCTS, EQUIPMENT, MATERIALS

TRADITIONAL STYLE WINDOW WITH MODERN FEATURES

MFR'S DESCRIPTION: traditional styled aluminum window with new materials and design improvements.
USES: residential windows
SPECS/FEATURES: interior and exterior optional white finish is a durable baked-on enamel. Windows have built-in channels for screens and storm sash. Windows are supplied with self-storing storm sash and screens, or these may be purchased separately and installed from inside of window. Window latch is at bottom. When window is closed, it snap-locks automatically.
AIA FILE NO. 16-E
MFR: GENERAL BRONZE CORP.
Circle 243 for further information

PRE-FAB FIREPLACE FOR RESIDENTIAL USE

MFR'S DESCRIPTION: fireplace with versatile design for fitting any decor.
USES: heating
SPECS/FEATURES: fireplace is all metal. Opens to the front and to both sides, permitting heat to radiate in a wide arc. Handles logs up to 20"; burning pit is covered by a fire screen. Fireplace has its own fluing, chimney and hearth and is independent of structure, location or duct system. Designed to be placed anywhere in a room (wall, corner or center).
AIA FILE NO. 14-E
MFR: BARDICK INDUSTRIES, INC.
Circle 244 for further information

IMPROVED HARDWARE FOR DRYWALL INSTALLATION

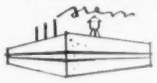
MFR'S DESCRIPTION: newly designed drywall wood screw.
USES: installing drywalls
SPECS/FEATURES: new 1½" screw features a diamond point, double-lead thread, contoured head, and cadmium coating. New screw is ⅛" longer than older model, and other features are elimination of "wobble" upon entry. Added corrosion resistance has been supplied by the cadmium coating.
AIA FILE NO. 27-A
MFR: U. S. GYPSUM CO.
Circle 245 for further information

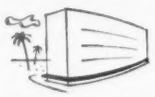
NEWLY DESIGNED DOOR HANDLES

MFR'S DESCRIPTION: newly designed door pulls with handles made of a butyrate plastic.
USES: commercial, institutional and industrial
SPECS/FEATURES: injection-molded over a metal insert, plastic handles

by Faries-McMeekan for

INDUSTRIES





RESIDENCES

INSTITUTIONS

If you have a question regarding mirrors or would like a copy of our latest catalog be sure to write today. We offer a complete selection of framed and unframed plate glass mirrors in standard and special sizes for walls, doors and other needs. In small quantities or large —for your mirror requirements call on:

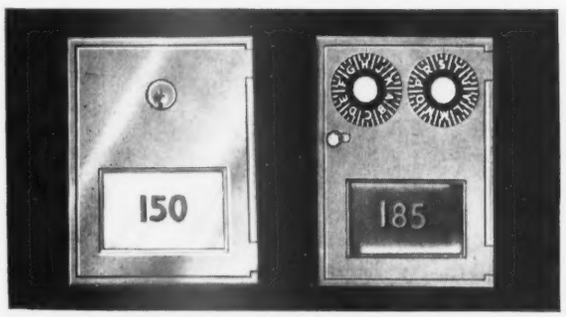
Faries-
fm McMeekan, Inc.

Write for catalog

P.O. Box 35, Phone JAckson 2-8660, Elkhart, Ind.

Circle 145 for further information

For Colleges, Clubs, Apartments, Hospitals, Residential Hotels, Motels...



Corbin Letter Boxes with Modern Styling-Security-Convenience

The smooth, streamlined appearance of Corbin 150 and 185 letter boxes is more than just a style feature. It's a top security feature, too. Flush hinges make hinge pins inaccessible. Doors that close flush discourage tampering. In addition, flush mounted frame assures unobstructed opening ... no jammed mail or periodicals. All Corbin boxes are cast of bronze for longest service life. Send for PLANNED MAIL HANDLING FILE, Dept. D10.

CORBIN®

CORBIN WOOD PRODUCTS DIVISION
THE AMERICAN HARDWARE CORPORATION
NEW BRITAIN, CONNECTICUT

Circle 146 for further information

PRODUCTS, EQUIPMENT, MATERIALS

have good resistance to impact and weathering and retain their quality despite changes in temperature, manufacturer says. Pattern makes grip firm and slip-free. Providing latitude for variety in door decor, handles come in turquoise, red, yellow and black. Colors are integral part of plastic.

AIA FILE NO. 27-B

MFR: NILES CORP.

Circle 246 for further information

CURING/HARDENING AGENT FOR CONCRETE SURFACES

MFR'S DESCRIPTION: product developed to cure, chemically harden, seal and dust-proof concrete in one operation.

USES: concrete finishing.

SPECS/FEATURES: agent provides curing and hardening of exposed floor slabs, walls, beams, columns, sidewalks and other concrete surfaces. It also provides surfacing for concrete floors to be covered by resilient floors. Available in 50 and 30 gallon drums and 5 gallon pails.

AIA FILE NO. 3-B-1

MFR: W. R. MEADOWS, INC.

Circle 247 for further information

BELL CARILLONS/CHIMES ON TAPE FOR CHURCHES

MFR'S DESCRIPTION: console that automatically plays taped recordings of carillon selections for church tower music.

USES: religious buildings

SPECS/FEATURES: controls on the console permit playing of any bell carillons or chimes desired for any time period up to 1½ hours. An automatic timer allows broadcasting at any preset time over a 7-day period. Recordings available were made on location at carillon towers in Europe and America.

AIA FILE NO. 31-i-7

MFR: MEMORIAL CHIMES, INC.

Circle 248 for further information

DRYWALL METAL SCREW OF NEW DESIGN

MFR'S DESCRIPTION: a new, improved design drywall metal screw.

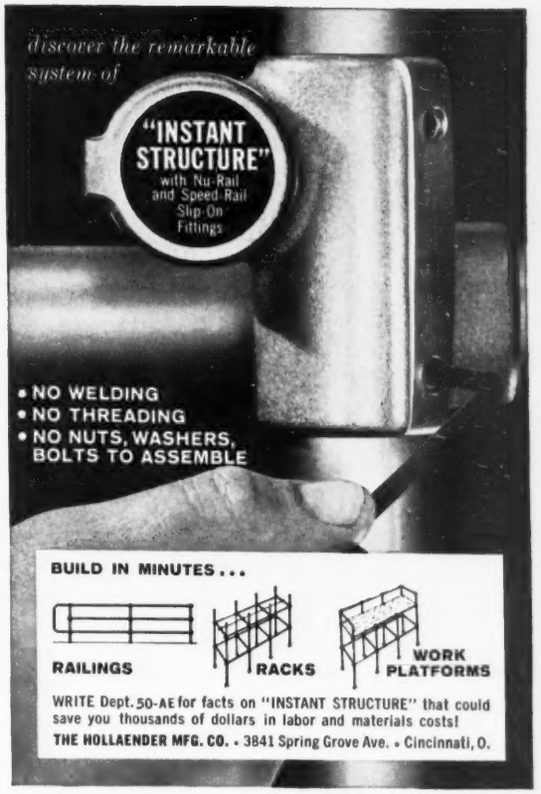
USES: application of drywalls

SPECS/FEATURES: featuring a smaller point, new metal drywall screw penetrates metal studs easier and faster to reduce on-the-job application time, manufacturer notes. Increased thread surface on the new 1" screw also furnishes improved holding power, it is said, for more permanent, strip-free installation.

AIA FILE NO. 27-A

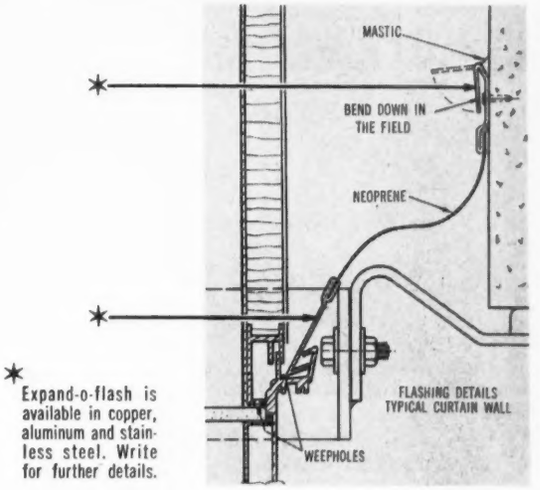
MFR: U. S. GYPSUM CO.

Circle 249 for further information


discover the remarkable system of
"INSTANT STRUCTURE"
with Nu-Rail and Speed-Rail Slip-On Fittings
• NO WELDING
• NO THREADING
• NO NUTS, WASHERS, BOLTS TO ASSEMBLE
BUILD IN MINUTES...
RAILINGS
RACKS
WORK PLATFORMS
WRITE Dept. 50-AE for facts on "INSTANT STRUCTURE" that could save you thousands of dollars in labor and materials costs!
THE HOLLAENDER MFG. CO. • 3841 Spring Grove Ave. • Cincinnati, O.

Circle 147 for further information

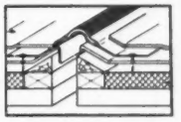
Expand-o-flash
IN CURTAIN WALL CONSTRUCTION



★ Expand-o-flash is available in copper, aluminum and stainless steel. Write for further details.

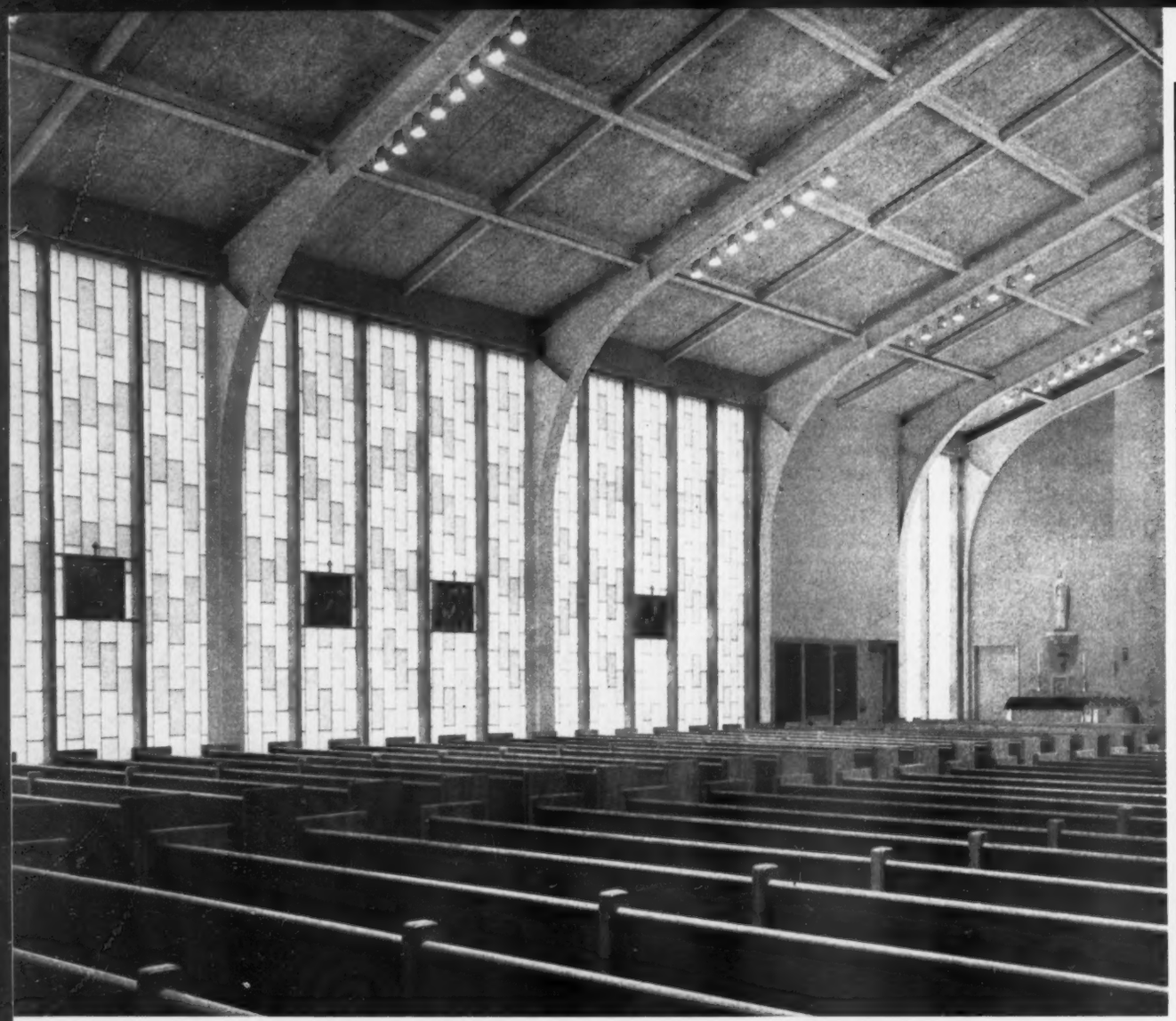
Curb roof expansion joint.

Low profile expansion joint.



LAMONT & RILEY CO.
300 SOUTHWEST CUTOFF, WORCESTER 7, MASS.

Circle 148 for further information



1956—61: Five years of "up-state" weather has not marred the beauty or weather tightness of Kalwall Translucent Walls in Church of St. Michael the Archangel, South Glens Falls, N. Y. Architect: Harrison and Mero, AIA. Contractor: Waggaman and Collyer.

You get a lasting wall of light with translucent Kalwall

Beauty plus durability . . . this is the quality you will appreciate in translucent Kalwall.

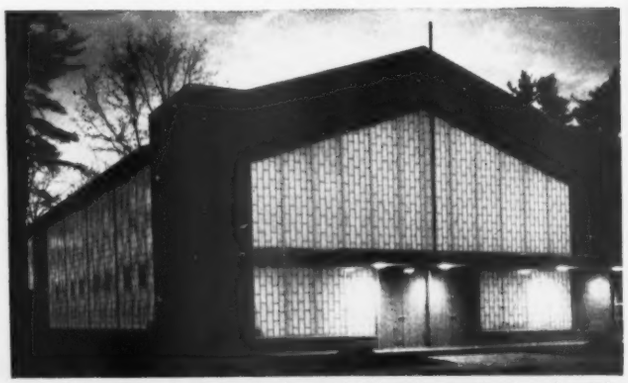
You get a delightful "wall of light" — gentle, shadowless, diffused light. You get a wall that *lasts*, too.

Kalwall is made of tough fiberglass sheets permanently bonded to a strong aluminum grid. This sheet, produced by an exclusive formula available *only* to Kalwall, assures a wall that resists acids, the elements, and erosion.

Kalwall's experience in lamination and use of highest quality materials cannot be duplicated by any manufacturer. Little wonder that this new building material has been successfully used in over 3000 installations!

Write for details on "The Lasting Wall of Light!"

KALWALL CORPORATION
Dept. C-101, 43 Union Street, Manchester, N. H.



Kalwall translucent walls glow with soft radiance—by day—by night.

PRODUCTS, EQUIPMENT, MATERIALS

AERATING TANKS FOR COMMERCIAL USE

MFR'S DESCRIPTION: handling sewage problems for 10 to 500 people or 1,000, 3,000 or 5,000 gallons per day.
USES: sewage treatment
SPECS/FEATURES: process is a purification of liquid sewage by aeration and the reduction of sewage solids by aerobic digestion in the same tank at the same time. This combination treatment helps simplify required structures, helps eliminate process controls, and effects a good percentage of reduction in oxygen demanding impurities present in the sewage.
AIA FILE NO. 29-C-2
MFR: FOOD MACHINERY & CHEMICAL CORP.
Circle 250 for further information

PRE-MOULDED SEALANT FOR ⅛" JOINTS

MFR'S DESCRIPTION: sealing material for narrower joints.
USES: concrete pavements
SPECS/FEATURES: impregnated polyurethane foam is pre-compressed (or compressed on site), to a thickness as narrow as 1/16". After insertion into joint, it expands laterally to prevent moisture seeping into subgrade.
AIA FILE NO. 7-C
MFR: NATIONAL EXPANSION JOINT CO.
Circle 251 for further information

SUN SCREENING SYSTEM FOR EXTERIOR USE

MFR'S DESCRIPTION: exterior sun screening system.
USES: Sun control
SPECS/FEATURES: system consists of small horizontal louvers locked permanently in place by vertical warp wires spaced ½" apart. Louvers are spaced and tilted to help screen out up to 89% of the sun's rays, manufacturer says.
AIA FILE NO. 35-P-1
MFR: REFLECTAL CORP. DIV. OF BORG-WARNER CORP.
Circle 252 for further information

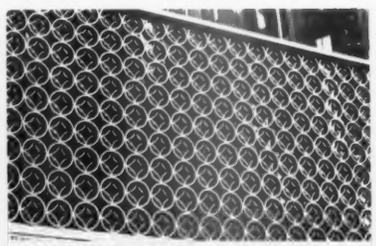
SLIDING PATIO DOOR IN PRE-FABRICATED LINE

MFR'S DESCRIPTION: preassembled and factory adjusted sliding patio door.
USES: residential
SPECS/FEATURES: door is available in 5', 6', and 8' widths. It is fabricated from tubular aluminum extrusions and is continuous-welded throughout. Unit is shipped fully glazed, assembled, and ready to be set into a rough opening with about 10 nails.
AIA FILE NO. 16-L
MFR: AMERICAN DURALITE CORP.
Circle 253 for further information

←Circle 149 for further information

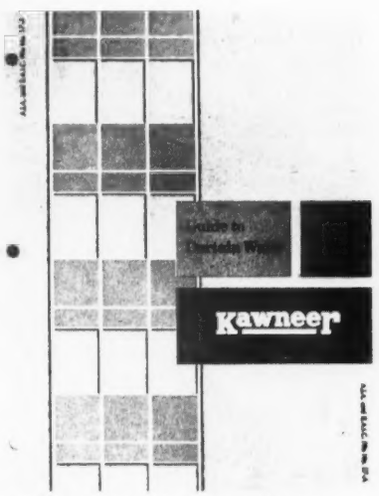
LITERATURE

Literature cited in this department is available from various manufacturers and associations free of charge, except where indicated. To obtain copies, circle the keyed numbers on the reader service cards facing pages 1 and 86.

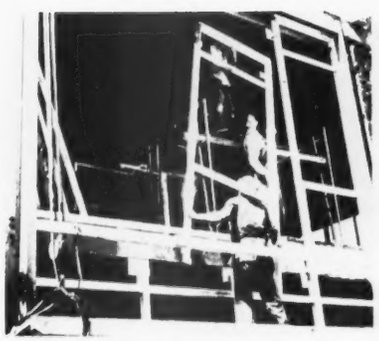


ALUMINUM SHEETS & SCREENS
Various models and patterns of aluminum sheets and screens are discussed and displayed in a new product brochure on a series of exterior aluminum wall products. Photographs and cross-sectional drawings illustrate the text. (7 pp.)
AIA FILE NO. 17-A
MFR: ALUMINUM COMPANY OF AMERICA
Circle 300

COATINGS AND ADHESIVES
Manufacturer has made available to architects and engineers a folder explaining the operations and consulting facilities of the company on epoxy resins. A detailed analysis of each of the epoxy resins produced by manufacturer, accompanied by a general description, properties and working instructions, are also included.
AIA FILE NO. 17-F-1
MFR: PONT DU GARD INC.
Circle 301



GUIDE TO CURTAIN WALLS
Brochure provides technical guidance on each of manufacturer's wall systems including their capabilities and limitations and how problem areas are handled. In addition, recommendations in the selection of windows, panels, sealants, finishes and specifications are given. Brochure is illustrated with photographs and cross-sectional drawings. (23 pp.)
AIA FILE NO. 17-A
MFR: THE KAWNEER CO.
Circle 302



CURTAIN-WALL MANUAL
Brochure describes a line of curtain walls and panels. Various applications, colors, panel materials and designs are illustrated by means of numerous photographs and cross-sectional drawings. Weatherproofing properties and advantages are also discussed in detail. Full color photograph illustrates the application of porcelain enamel to aluminum panels. (10 pp.)
AIA FILE NO. 17-A
MFR: H. H. ROBERTSON CO.
Circle 303

STEEL CURTAIN WALLS
Use of steel curtain walls and their suitability to modern building concepts are covered in a new booklet. Design of curtain walls with stainless steel and porcelain-enameled steel forms the major part of the brochure, but reference is also made to re-designing of older buildings with steel curtain walls. A series of new buildings is shown using steel curtain walls. (52 pp.)
AIA FILE NO. 17-A
MFR: UNITED STATES STEEL CORP.
Circle 304

how to Observe without being Seen

Houston State Psychiatric Institute for Research Training, Houston, Texas

From the darkened auditorium, it's a window...

From brighter examination room, it's a mirror!

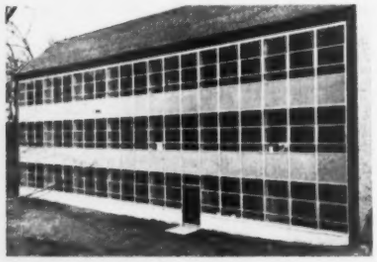
It's *Mirropane*®, the "see-thru" mirror. Useful in hospitals, schools, banks, stores, homes...anywhere you want to observe without being seen. When made with clear plate glass, a light-intensity differential between rooms of about 7 to 1 is needed. For even better performance, you should specify *Mirropane* made with *Parallel-O-Grey*® plate glass. This reduces the light-intensity differential to about 3 to 1. Call your L·O·F distributor or dealer, listed under "Glass" in the Yellow Pages, or write L·O·F, 8101 Libbey-Owens-Ford Building, Toledo 1, Ohio.

MIRROPANE
the "see-thru" mirror
LIBBEY·OWENS·FORD

MADE IN U.S.A.
LOF GLASS

Circle 150 for further information

LITERATURE



CURTAIN-WALL PANEL

Detailed information on a curtain-wall paneling series and other paneling products is included in a recently published booklet. Test results, suggested applications, application photographs, as well as load tables, fastening details, typical elevations and sectional details are also given. (118 pp.)

AIA FILE NO. 17-A/19-D

MFR: PHILIP CAREY MANUFACTURING CO.

Circle 305

STRUCTURAL PANEL MANUAL

Manual presents a comprehensive story of the structural panel material as produced by manufacturer. Design manual is divided into several sections containing information on applications, variety of materials available, explanation of method of assembly, and a thorough discussion of the technical aspects of the panel with test data in text, graph and tabular forms. (60 pp.)

AIA FILE NO. 17-A

MFR: INTERNATIONAL STEEL CO.

Circle 306

BUILDING WITH ELASTOMERS

Brochure discusses and reviews some of the sealing systems based on preformed neoprene gaskets. Various photographs of famous structures illustrate the subject along with cross-sectional drawings. Manufacturer includes a graph containing their suggested quality criteria in using black neoprene glazing and panel gaskets. (4 pp.)

AIA FILE NO. 17-A

MFR: ELASTOMER CHEMICALS DEPT., E. I. DUPONT DE NEMOURS & CO.

Circle 307

PORCELAIN ENAMEL PANELS

Twenty-two karat gold facades, four-color murals and a variety of unique textures are some of the applications of porcelain enamel panels described in a new booklet. Case histories of special panel projects completed for banks, schools, restaurants, shopping centers and office buildings are included. (12 pp.)

AIA FILE NO. 15-M-1

MFR: THE ERIE ENAMELING CO.

Circle 308

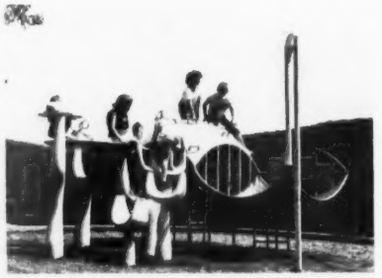
LAB SURVEY OF SEALANTS

Manufacturer has made available a laboratory survey of *LP* base sealants as compared with sealants produced by this company. Included in this report are comments on durability, resilient energy and performance, absorption of joint movement versus resiliency, evaluation of resilient energy, elastic recovery, and other data. (21 pp.)

AIA FILE NO. 7-D

MFR: BUILDING PRODUCTS DIV., SONNEBORN CHEMICAL & REFINING CORP.

Circle 309



CHILD'S PLAY

Brochure on contemporary playground equipment begins with a statement on the theory behind the design of this particular series. Products discussed include equipment such as simulated "tree trunks," hexagonal blocks, "shells," alphabet fences, and networks or mazes. In each case, manufacturer discusses basic concepts underlying the design, the physical development, function, points of safety, design placement in playground and maintenance. A consulting service is reviewed. (47 pp.)

AIA FILE NO. 35-F-5

MFR: PLAYGROUND CORP. OF AMERICA

Circle 310

ADHESIVES/SEALANTS

ASPHALT JOINTS/SEALS

Listing of advantages, uses, product dimensions, specifications and installation drawings of manufacturer's line of sealants and joints are features of a new brochure. (4 pp.)

AIA FILE NO. 4-E-11

MFR: THE PHILIP CAREY MANUFACTURING CO.

Circle 311

LITERATURE

LIQUID POLYMER SEALANT

Manufacturer has made available a brochure explaining the properties and advantages of a one-part 100% liquid polymer sealant for use in curtain-wall construction and other applications. Data for specifiers is included. (4 pp.)

AIA FILE NO. 17-F-1/J

MFR: THE TREMCO MANUFACTURING CO.

Circle 312

IMPROVED SEALING SYSTEM

Booklet discusses a new sealing system consisting of three basic components which form an integral unit between surfaces subject to mechanical or thermal movement. Various applications, typical quantities required, joint design, and advantages of the products are covered. (9 pp.)

AIA FILE NO. 7-D

MFR: BUILDING PRODUCTS DIV., SONNEBORN CHEMICAL & REFINING CORP.

Circle 313

CERAMIC TILE ADHESIVES

An illustrated and informative catalog deals with mortars, mastics, grouts and other related products for ceramic tile installation. Also described is manufacturer's line of specialty items for mosaic tile, marble and terrazzo. (8 pp.)

AIA FILE NO. 23-P

MFR: TECHNICAL ADHESIVES, INC.

Circle 314

SOLVING ADHESIVE PROBLEMS

Booklet describes the solution to many difficult adhesive problems and lists many new adhesives, coatings and chemical compounds for a variety of applications. A list of adhesives produced by the manufacturer is included. (12 pp.)

AIA FILE NO. 17-F-1

MFR: ADHESIVE PRODUCTS CORP.

Circle 315

CONCRETE

CONCRETE MIXING & PLACING

Literature contains technical application information on the proper mixing and placing of a type of insulating concrete. Detailed instructions for transit and job mixing are also included. The wet density of this concrete, as poured, is discussed. Literature also describes the proper use of air entraining agents, yield and field check for yield, and factors which contribute to loss of yield.

AIA FILE NO. 4-B

ASSN: PERLITE INSTITUTE, INC.

Circle 316

CALCIUM CHLORIDE CONCRETE

Data on major effects of calcium chloride, early and ultimate strength, cold weather protection, high early strength cement, and air entrained cement are contained in a new technical manual. Data includes research on the relation of calcium chloride to early strength, both compressive and flexural, ultimate strength, curing, workability and density, and cold weather concreting. A separate section reviews calcium chloride in relation to extra cement. (40 pp.)

AIA FILE NO. 4-A

ASSN: CALCIUM CHLORIDE INSTITUTE

Circle 317

PRECAST ROOF SLABS

Brochure illustrates how two recently completed churches used precast concrete roof slabs. Included in the brochure are interior and exterior photographs of both churches and detail drawings which show how the slabs were used with a steel frame in one church and a concrete frame in the other. (6 pp.)

AIA FILE NO. 4-K

MFR: THE FLEXICORE CO., INC.

Circle 318

WINDOWS

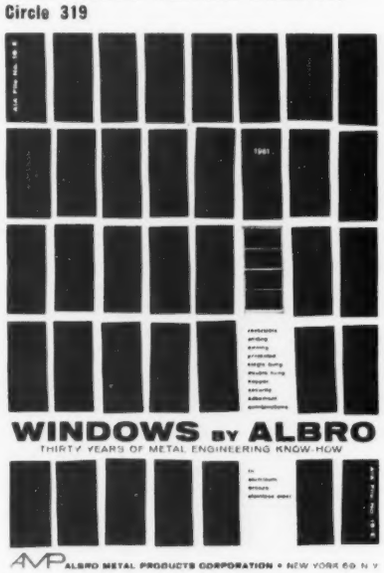
CLASSROOM SHADE DEVICES

Window-shade products and school classroom light control are the subjects of a new brochure. Swatches from a series of shade products are supplied, along with information on varied lighting requirements in schoolrooms.

AIA FILE NO. 35-P-5

MFR: JOANNA WESTERN MILLS CO.

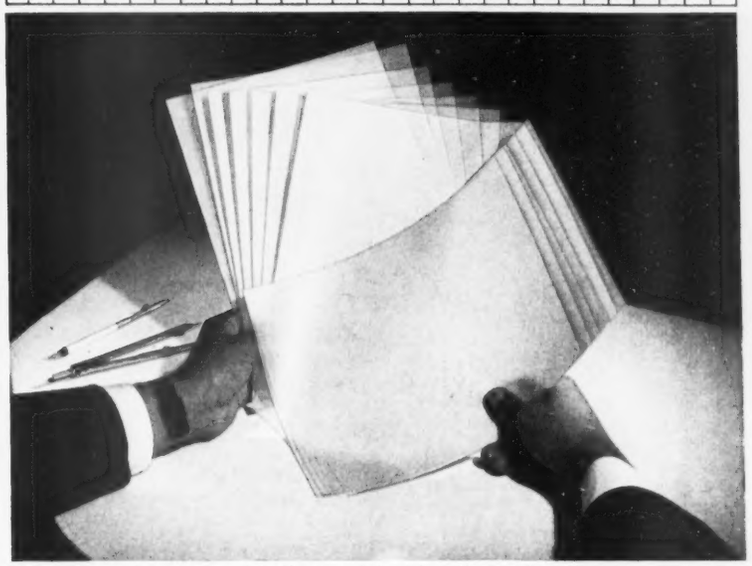
Circle 319



NEW WINDOW CATALOG

A new illustrated color catalog on windows lists such window types as: reversible, sliding, awning, projected,

DRAFTING TRENDS



Appearance is not a good indicator of drafting film workability or reproduction quality—see test offer below.

In drafting films, it's the coating that counts

Film Similarities

All drafting films share one common characteristic—*every* major brand employs a polyester base. This polyester material may vary somewhat in grade (from clear to milky) or in gauge (from .002 to .007). However, its properties remain so nearly identical that no appreciable difference in print-back speed can be noted by exposing diazo material through the uncoated film. Accordingly, all polyester films have these unique features: dimensional stability, transparency, flexibility, moisture-resistance and tear strength.

Coating Differences

These advantages mean nothing to the engineer, draftsman or architect until a surface receptive to pencil and ink is put on the film. POST applies three distinct micro-coatings to its polyester film, baking these elements and the film at such high temperatures that they are literally fused. This process also "preshrinks" the material, endowing Polytex with slightly greater dimensional stability.

More Drafting Latitude

The net result of the exclusive POST *coating process is the most durable drafting film surface available*—a surface on which, if circumstances demand, you can use the hardest grade of pencil without destroying the coating. Some pencils work better than others, of course. Plastic-based pencils are best of all when permanency or washability are considered.

Test Offer

To convince you, regardless of previous or present drafting film experience, that POST Polytex offers a superior coating with outstanding erasibility, pencil and ink adhesion, a free Polytex test kit is yours without obligation. We'll mail an 8½ x 11 drafting film sample, plus a vinyl eraser and drafting pencil assortment, packed in a POST Pocket Protector. Write for it on your letterhead today. *Frederick Post Company, 3654 N. Avondale Avenue, Chicago 18, Ill.*

POST

SENSITIZED PAPERS & CLOTHS • TRACING & DRAWING MEDIUMS • DRAWING INSTRUMENTS & SLIDE RULES
ENGINEERING EQUIPMENT & DRAFTING SUPPLIES • FIELD EQUIPMENT & DRAFTING FURNITURE

Circle 151 for further information

Announcing a new name in architecture to reflect the integration of eight famous and respected building products... and the creation of a single source, a single specification, a single responsibility for quality fenestration and architectural framing systems

NORTHROP ARCHITECTURAL SYSTEMS

subsidiary of Northrop Corporation

5022 Triggs Street, Los Angeles 22, California ANgelus 2-6171

acme | arcadia | PC PAC/WALL

These are the products of Northrop Architectural Systems – brand names long-associated with quality and technological progress, now combined and coordinated to bring a new systems approach to architectural product development:

ACME FRAMING SYSTEMS comprising a full-range of aluminum framing components for storefront applications.

ACME ENTRANCE DOORS in standard and custom sizes with choice of hardware and door controls.

ACME SLIDING DOORS designed by Arcadia to provide genuine Arcadia quality, competitively priced for residential and light commercial construction.

ARCADIA SLIDING DOORS featuring the exclusive weathertight, troublefree design features which have gained unparalleled architectural acceptance.

ARCADIA SLIDING WINDOWS in two series of superior aluminum architectural windows in stock and custom sizes.

ARCADIA WINDOW-WALL SYSTEMS soon to be available in two integrated, all-aluminum systems of factory-fabricated framing components.

ARCADIA BRISE-SOLEIL a true sun control system of grid panels, offering 100% shading plus wide flexibility in design, finish and installation.

PAC WALL CURTAINWALL in standard and custom systems in steel and aluminum. Pac/Wall products are engineered and manufactured by Pacific Curtainwall Inc., a separate subsidiary of Northrop Corporation.

Soon your Acme, Arcadia or Pac/Wall representative will be bringing more news about Northrop Architectural Systems – its plans and its products to build the face of a city.

LITERATURE

single hung, double hung, hopper, security, casement and combinations. Most of these are described by means of cross-sectional drawings, photographs, data on key features and detailed specifications. Includes references to manufacturer's other products, such as curtain walls and architectural metal work. (20 pp.)
AIA FILE NO. 16-E
MFR: ALBRO METAL PRODUCTS CORP.
Circle 320

FIRE DOORS & HARDWARE

Brochure contains a complete review of the company's labeled products including fire door barriers and new fire exit hardware. A guide to the proper selection of hardware for fire doors and fire-exit doors is given in chart form for quick reference. Ninety different door styles are also shown and information is provided on testing requirements.
AIA FILE NO. 16-A/B
MFR: OVERLY MANUFACTURING CO.
Circle 321

HVAC

HVAC REFERENCE BOOKLET

A new reference booklet shows adaptations of packaged heating and cooling for all types of installations. Booklet is specifically designed to help plan heating and cooling systems adaptable to modern buildings. Complete with basic specifications, this publication shows how the units help provide installations that are adaptable to service requirements and space problems. Includes new type of roof mounted units.
AIA FILE NO. 30-A
MFR: TJERNLUND MANUFACTURING CO.
Circle 322

← Circle 152 for further information

Circle 153 for further information about NAT

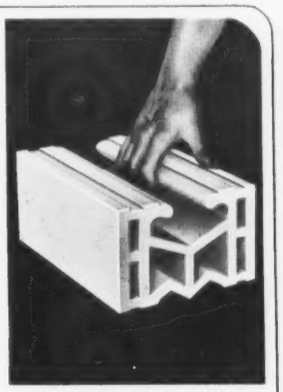
The National Biscuit Company's Fair Lawn, N.J., plant, showing exterior walls of Natco Dri-Speedwall tile.

NABISCO RECIPE FOR A BEAUTIFUL, MODERN BAKERY

26,624,850 lbs. Natco Dri-Speedwall tile

3,272,992 lbs. Natco Vitritile

Modern architectural design



Natco Dri-Speedwall tile. Nominal face size 5⅓" x 12"

Almost 30 million pounds of Natco structural clay tile products went into the construction of Nabisco's new Fair Lawn, New Jersey bakery.

Exterior walls were constructed of Natco Dri-Speedwall tile. This tile is designed to form a series of interior "V-type" channels. Any small amount of moisture that may penetrate through the exterior mortar joints is directed through these open channels and is drained off through weep holes at required locations.

Interior walls of smooth, attractive Natco Vitritile — a ceramic glazed clay facing tile — assure *complete* sanitation in mixing, baking, packaging and other inside areas.

For complete information write for catalog S-61.

Today's idea becomes tomorrow's showplace . . . when Natco structural clay products are in the picture

natco corporation

GENERAL OFFICES: 327 Fifth Avenue, Pittsburgh 22, Pennsylvania . . . Branch Offices: Boston • Chicago • Detroit • Houston • New York • Philadelphia • Pittsburgh • Syracuse Birmingham, Ala. • Brazil, Ind. . . . IN CANADA: Natco Clay Products Limited, Toronto

Facings, cores and colors to meet every architectural requirement...

Whatever your architectural requirements, Haskelite makes a curtainwall panel to meet those requirements! That's why, every year, more and more creative architects are *specifying* Haskelite panels for *all types* of buildings—new or modernized.

High strength-to-weight ratio and outstanding weather resistance are just two reasons for the popularity of Haskelite panels. They go up faster . . . keep their original beauty indefinitely with remarkably *little* maintenance. They come in all types of facings, cores, colors, sizes, thicknesses—permanently insulated and completely factory-prefinished—*to give you almost unlimited design and structural freedom*. Send this coupon for full information.

HASKELITE®

HASKELITE MANUFACTURING DIVISION
EVANS PRODUCTS COMPANY, Dept. AE-10, GRAND RAPIDS, MICH.

Please send information regarding Haskelite Curtainwall panels.

NAME_____ TITLE_____

COMPANY_____

STREET_____

CITY_____ ZONE____ STATE_____

Master laminators for over 40 years

Circle 154 for further information

LITERATURE

AIR INTAKE/EXHAUST UNIT
Brochure describes a penthouse of extruded aluminum designed to meet architectural requirements for prefabricated air intake or air exhaust units for handling ventilation problems through the roof. Subjects covered include various louvers available, screens, anchorages and finishes.
AIA FILE NO. 30-D
MFR: CONSTRUCTION SPECIALTIES, INC.
Circle 323

HVAC MANUAL
Large heating and ventilating units and heat diffusers are covered in a new, comprehensive engineering manual. Contains selection charts for steam and hot water coil capacities, fan-motor ratings and dimensional data for all models and sizes produced by manufacturer. (32 pp.)
AIA FILE NO. 30-A
MFR: CARRIER AIR CONDITIONING CO.
Circle 324

MAKEUP AIR SYSTEMS
A new handbook presents an analysis of the need for, and the basic steps to follow in designing make-up air systems. Brochure points up the need for tempered make-up air to replace room air that is expelled from any building by fans in forced-air exhaust systems. (8 pp.)
AIA FILE NO. 30-A
MFR: REZNOR MANUFACTURING CO.
Circle 325

HEAVY-DUTY FANS
Booklet on a special design of heavy-duty fans reviews its construction features and operating characteristics. Drive arrangements, control methods, and types of drives are described and illustrated. Specific component features such as sound-absorbing bases are also discussed. Capacity tables are provided for all 15 sizes. (48 pp.)
AIA FILE NO. 30-D-1
MFR: INDUSTRIAL DIV., AMERICAN-STANDARD
Circle 326

SANDWICH CONSTRUCTION MAKES ERECTION OF 100 SQ. FT. PANELS QUICK AND EASY

F-6

URETHANE FOAM

adds new dimensions to curtain walls

In just 12 minutes, a 5-ft. by 20-ft. factory engineered panel is raised, positioned, interlocked and anchored into place! This is dramatic proof of the newest advance in curtain wall design made possible by the materials of modern chemistry.

These tongue-and-groove, metal panels—with their self-bonding cores of polyurethane foam—are light in weight, easily handled, made in sizes up to 100 sq. ft. Thin-wall design allows up to 5% more useable interior space. The stressed-skin panels stay flat; will not buckle or warp under temperature and weather extremes.

The urethane foam core is self-extinguishing; is permanently bonded; an integral part of the panel unit; has good dimensional stability and insulation properties. It is an efficient acoustical, thermo and vapor barrier that does not lose its effectiveness with aging.

A REPORT on the use of urethane foam in curtain wall construction is available for your information and evaluation. Write for your copy.

Mobay Chemical Company
Dept. AE-2 Penn Lincoln Parkway West
Pittsburgh 5, Pa.

Mobay is the leading supplier of quality chemicals used in the manufacture of both polyether and polyester urethane foams.

MOBAY
First in Urethane Chemistry

Circle 137 for further information

LITERATURE

INDUSTRIAL AIR HANDLING

Detailed information on performances and characteristics on a new series of fans for industrial air handling is now available. Brochure contains new design advantages of the fans, diagrams on mechanical efficiency, selection tables for each size. (12 pp.)

AIA FILE NO. 30-D-1

MFR: CHICAGO BLOWER CORP.

Circle 327

HOT WATER EQUIPMENT

Especially helpful to architects, consulting engineers and contractors are specification details, performance curves, installation diagrams, pressure drop tables and general product information contained in a new hot water heating equipment brochure. (16 pp.)

AIA FILE NO. 29-H

MFR: DUNHAM-BUSH, INC.

Circle 328

PERIMETER HVAC

Engineering of perimeter heating and air conditioning systems is the subject of a new brochure. Various methods for single- and multi-story use are shown along with a series of perimeter units.

AIA FILE NO. 30-A

MFR: GERWIN INDUSTRIES, INC.

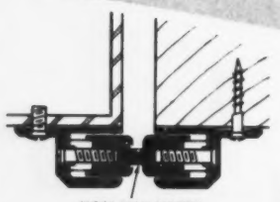
Circle 329

Get ZERO's new 1961 Catalog, with full size details of the complete line of saddles & weather stripping. Write for your copy today!

ZERO Weather Stripping for:
- Doors
- Windows
- Lightproofing

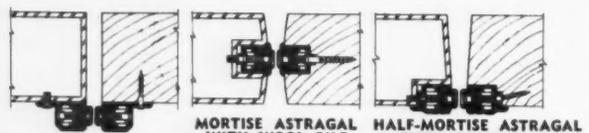
ZERO HAS THE WEATHER STRIPPING YOU NEED

- Soundproofing
- Sliding Doors
- Saddles
- Saddles for Floor Hinged Doors

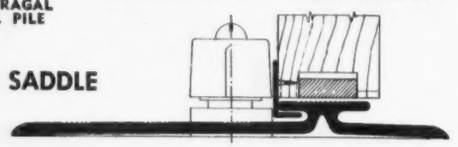


WOOL PILE ASTRAGALS

Compensate for expansion and contraction of doors. Available in extruded bronze or aluminum.



#150 SADDLE



The ZERO 150 is specifically designed for doors equipped with floor hinges.

SEE OUR CATALOG IN SWEET'S

19b-ZER

WEATHER STRIPPING BY ZERO

ZERO WEATHER STRIPPING CO., INC.

451 East 136th St., New York 54, N.Y. • LUdlow 5-3230

Circle 156 for further information

BASEBOARD HEATING

Brochure sets out the best features of forced air and electric baseboard heating. Describing a recessed model and a standard unit for wall mounting, brochure also includes specifications for all 24 models manufactured. (4 pp.)

AIA FILE NO. 30-B

MFR: HUNTER DIV., ROBBINS & MYERS, INC.

Circle 330

GAS CONVERSION DATA

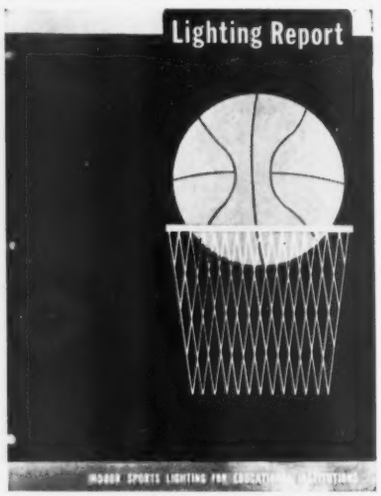
Data for conversion of industrial gases into various other measurements is simplified by use of a handy plastic card.

AIA FILE NO. 29-F

MFR: AIR REDUCTION CO.

Circle 331

LIGHTING



INDOOR SPORTS LIGHTING

Indoor Sports Lighting for Educational Institutions includes 12 photographs showing both mercury vapor and incandescent fixtures in indoor gymnasium applications. Brochure discusses light distribution, uniformity, compactness of light source, output/wattage relation, life, shielding, upward light component, installation, and maintenance with reference to gymnasium installations. (4 pp.)

AIA FILE NO. 31-F-23

MFR: HOLOPHANE CO., INC.

Circle 332

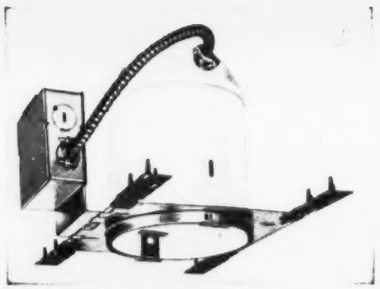
EPOXY CONCRETE BONDING

A series of 14 epoxy resins for use in concrete and concrete construction is covered in a new brochure. Properties and suggested use of each product is covered as well as test results. (6 pp.)

AIA FILE NO. 4-A

MFR: STA-CRETE, INC.

Circle 333



RECESSED LIGHTING

Brochure describes a new adjustable recessed lighting fixture designed for 41 decorative trim and glass variations. Brochure describes how variations are made and illustrates the trim and glass available. (4 pp.)

AIA FILE NO. 31-F-2

MFR: LIGHTING FIXTURE DIV., THOMAS INDUSTRIES INC.

Circle 334

MISCELLANY

CURTAIN-WALL BROCHURE

Presentation of basic data which will give the architect and engineer a framework within which he may work out details for specific curtain-wall applications. Curtain wall discussed is a deep-frame system. Window arrangements, interlocking mullions, independent T-bar mullions, interior construction details, door frame details and multi-story construction are discussed and illustrated with cross-sectional drawings. (13 pp.)

AIA FILE NO. 17-A

MFR: LUPTON DIV., MICHAEL FLYNN MANUFACTURING CO.

Circle 335

FLOORING INSTALLATIONS

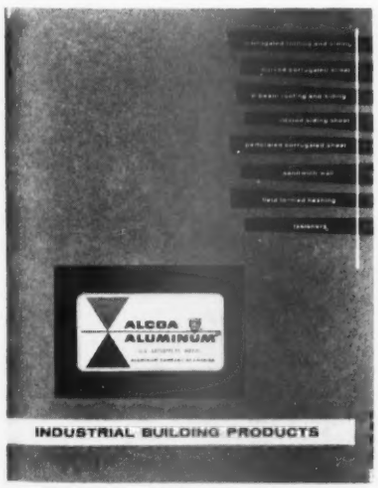
Illustrated bulletin gives complete data covering installation of all of manufacturer's resilient floor coverings, surfacing materials and bulletin-board cork lines. Also included are detailed maintenance information, an adhesive chart covering all of manufacturer's products, federal

LITERATURE

specifications chart and a tile calculation chart. (64 pp.)
AIA FILE NO. 23-G
MFR: CONGOLEUM-NAIRN, INC.
Circle 336

Commonwealth Promenade Apartments...Chicago, Illinois

PREFAB STAIR PRODUCTS
A series of educational bulletins on the advantages of prefabricated, one-piece, steel reinforced stair products has just been issued. These bulletins are based on actual building projects in which these units were installed and contain photographs, drawings and technical information on each project.
AIA FILE NO. 14-D
MFR: STAIRBUILDERS DIV., AMERICAN STAIR CORP.
Circle 337



ALUMINUM BUILDING PRODUCTS
A series of aluminum building products is discussed in a new booklet. Covered in detail and illustrated are: corrugated roofing and siding, curved corrugated sheet, V-beam roofing and siding, ribbed siding sheet, perforated corrugated sheet, sandwich walls, field formed flashing and fasteners. (35 pp.)
AIA FILE NO. 12-C
MFR: ALUMINUM COMPANY OF AMERICA
Circle 338

WALK-IN COOLERS/FREEZERS
A portfolio containing 48 reproductions of actual installation drawings of manufacturer's sectional walk-in units is available. These drawings illustrate a wide range of sizes and types of walk-in coolers and freezers.
AIA FILE NO. 30-F-6
MFR: BALLY CASE & COOLER, INC.
Circle 339

OFFICE ACCESSORIES
Brochure illustrates a series of decorative accessories for the executive office, including clocks, pen sets, calenders and bookends.
AIA FILE NO. 35-H
MFR: MCDONALD PRODUCTS CORP.
Circle 340

MULTI-STATION SHOWERS
Folio describes and illustrates a series of multi-station showers for institutional and industrial use. Various lay-out plans are included along with a list of accessories. (26 pp.)
AIA FILE NO. 29-H-3
MFR: THE LOGAN MANUFACTURING CO.
Circle 341

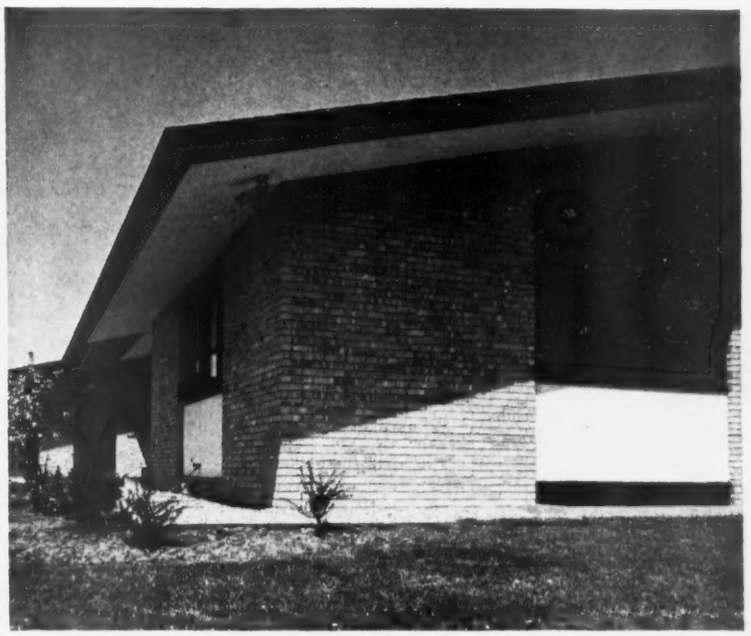
INSULATION WALL CHART
Wall chart helps simplify choice of insulation to meet the new "*R*" factor standards of the mineral wool industry. Plastic covered chart also shows color-coding system which identifies thicknesses.
AIA FILE NO. 37-A
MFR: GOLD BOND DIV., NATIONAL GYPSUM CO.
Circle 342

X-RAY REFERENCE FILE
Loose-leaf reference file contains scale drawings and specifications for X-ray processing tanks, tank inserts, coolers and all standard X-ray accessories. (64 pp.)
AIA FILE NO. 31-J
MFR: BAR-RAY PRODUCTS, INC.
Circle 343

DRAFTING INFORMATION
Answers to 110 commonly asked questions about reproduction and drafting processes and materials as well as surveying equipment are supplied in a new, easy-to-read brochure.
AIA FILE NO. 35-H
MFR: KEUFFEL & ESSER CO.
Circle 344

NEWS from Dow Corning

Brick that stay beautiful



Silaneal reduces staining, efflorescence

Picture this lovely home a decade from now. Will it still be beautiful, its brick unmarred by water and weather? The answer is yes. And the reason is Silaneal®, the plant-applied sodium siliconate treatment that helps brick repel water . . . prevents unsightly discoloration due to rain, dirt and efflorescence, protection especially important where lighter shades of brick are used.

How Silaneal protects beauty. With high suction rate brick, discoloration is caused chiefly by water that carries soot, soil and other dirt into the brick . . . actually embeds the dirt in brick surfaces. Once inside water also leaches salts out of the brick forming efflorescence on the surface. Silaneal treatment makes brick repel water while leaving it free to breathe. Dirt stays on the brick surface where it's rain-washed away. And where water can't get in, efflorescence is minimized . . . brick stays kiln clean.

Walls are stronger, too. Because Silaneal reduces the suction rate of brick, it also keeps brick from sucking too much water out of the mortar during lay-up. This means mortar cures slowly. Hairline cracks at the interface of mortar and brick are eliminated. A stronger bond results; moisture penetration through the finished wall is minimized.

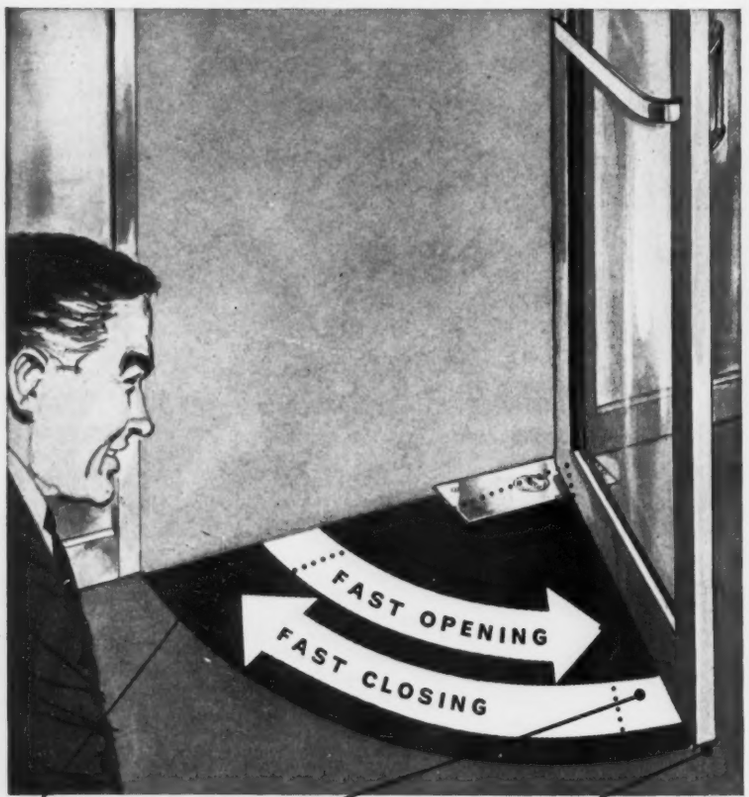
For more information about Silaneal and how it will help you build better brick buildings write to Dow Corning Corporation, Department 1122, Midland, Michigan.

SILANEAL® keeps brick clean

Dow Corning

Circle 157 for further information

NEW! DOR-O-MATIC®
Hydra-Cushion Door Control
with built-in protection



Latching speed slowed by hydraulic cushion

Shocking stops overcome by Hydra-Cushion slowdown

Positive back stop 90° or 105° hold open 90° or 105°

The new Dor-O-Matic Hydra-Cushion concealed-in-floor door control gives maximum protection to doors and frames. Stops and overhead holders which cause damaging shock when doors are banged open are unnecessary! Now doors are gently cushioned to a stop by an adjustable hydraulic action as they approach open position. No need for expensive, heavy-duty anchor or pivot reinforced hinges because the Dor-O-Matic Hydra-Cushion eliminates the damaging stresses transferred to hinges and door frames when doors are brought to a smashing halt. Positive built-in back stop . . . and built-in hold open . . . eliminate door or floor applied stop devices.

Available for either offset or center pivoted doors. Write for complete information on these new No. 2500 and 2600 series Hydra-Cushion door controls.

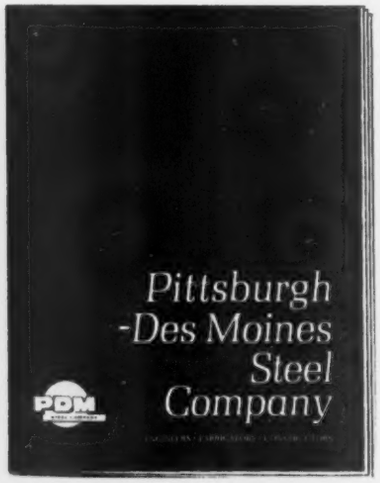
Eliminate damaged doors, frames, butts . . . overhead door holders . . . overhead door closers

DOR-O-MATIC division of REPUBLIC INDUSTRIES, INC.
7348 West Wilson Avenue
Chicago 31, Illinois
CANADA: Dor-O-Matic of Canada, Ltd., 550 Hopewell Ave., Toronto 10, Ontario

Circle 158 for further information

LITERATURE

CABLE SUPPORT SYSTEMS
Selection and installation of the right section for supporting structural cables, communication cables and automatic control or hydraulic line cables is covered in a new manual on cable support systems. (52 pp.)
AIA FILE NO. 31-C-73
MFR: CHALFANT PRODUCTS CO., INC.
Circle 345



STEEL IN CONSTRUCTION
Brochure describes activities of manufacturer in the steel construction industry, embracing design, fabrication and erection of a wide range of steel structures; steel alloys; aluminum; nickel; stainless, and other steels.
AIA FILE NO. 13-A
MFR: PITTSBURGH-DES MOINES STEEL CO.
Circle 346

DIRECTIONAL DIFFUSER
Brochure contains data on a new all-extruded aluminum directional diffuser. Complete installation information, as well as selection data for five frame styles and fourteen core patterns are included. (11 pp.)
AIA FILE NO. 30-J
MFR: WATERLOO REGISTER CO., INC.
Circle 347

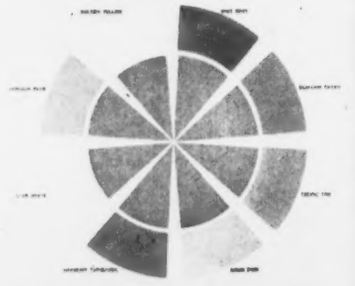
LIGHTING ACCESSORIES
A range of lamps and other lighting accessories for residential and commercial use is shown and discussed in a recently issued booklet.
AIA FILE NO. 31-F-2
MFR: EMERSON ELECTRIC CORP.
Circle 348

SPRAYED FOAM INSULATION
The application of sprayed polyurethane foam insulation offered as a service is described in a new brochure. In connection with this new service, company has demonstrated in brochure the application methods, insulation value and cost of sprayed foam compared with other types of insulation. (4 pp.)
AIA FILE NO. 37-C-2
MFR: WESTERN WATERPROOFING CO. (a service organization)
Circle 349

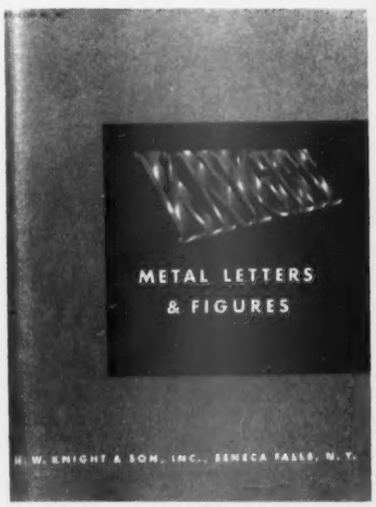
LAB EQUIPMENT/FURNITURE
Company's line of center, wall, auxiliary, balance and combination tables, including the latest furniture and equipment series, is presented in brochure. Comprehensive information is given on construction, manufacturing and finishing details of all units, together with more than 200 reference installations. (64 pp.)
AIA FILE NO. 35-E
MFR: METALAB EQUIPMENT CO.
Circle 350

EXECUTIVE BOOK CATALOG
The *AMA Management Bookshelf* is the annual catalog of all books, periodicals, and films produced by the Association. These publications provide the executive with authoritative reports on the latest developments in his specialized field and with practical solutions to general management problems. These reports are used by executives as aids to personal growth and company progress.
AIA FILE NO. N/A
ASSN: AMERICAN MANAGEMENT ASSOCIATION.
Circle 351

AllianceWare
"decorators' colors"



PLUMBING FIXTURE COLORS
Folder illustrates eight colors in which a line of bathtubs, water closets and lavatories is available. These are: gray, green, tan, pink, turquoise, white, blue and yellow.
AIA FILE NO. 29-H
MFR: ALLIANCEWARE, INC.
Circle 352



LETTERS & NUMERALS CATALOG
Fifty-nine different styles of letters and numerals, available in a variety of metals, are covered in a recently issued brochure. Also discussed are special trademarks and monograms fabricated by the manufacturer. (24 pp.)
AIA FILE NO. 15-R
MFR: H. W. KNIGHT & SON, INC.
Circle 353

RESIDENTIAL ELECTRICITY
Information on electrical equipment for residential use is provided in a new brochure. Divided into four sections, it provides information on load-centers—both fusible and plug-in circuit breakers types, small fusible devices and special application units. (36 pp.)
AIA FILE NO. 31-C-7/D
MFR: WALKER DIV., I-T-E CIRCUIT BREAKER CO.
Circle 354

REINFORCED FIBERGLASS
Brochure compares fiberglass with other popular fabricating materials and sets down specific advantages said to be gained by using reinforced fiberglass in installations commonly calling for metal construction. Photographs of recent projects comprise a major part of brochure.
AIA FILE NO. 24
MFR: GLASTRONICS
Circle 355

DRAFTING FURNITURE
Illustrated brochure provides complete description of 25 models of modular drafting furniture. (4 pp.)
AIA FILE NO. 35-H-3
MFR: STACOR EQUIPMENT CO.
Circle 356

Circle 159 for further information →

NOW AVAILABLE!

NEW, COMPLETE STANDARD SPECIFICATIONS and LOAD TABLES

STEEL JOIST INSTITUTE

STEEL JOIST INSTITUTE APPROVED SJI

STEEL JOIST INSTITUTE
Suite 715, 1346 Connecticut Ave., N.W., Washington 6, D. C.
Please send me a complimentary copy of the 1962 edition of the Standard Specifications and Load Tables.

Name_____

Address_____

Firm_____

City_____ Zone____ State_____

New! Vitreous Enamel in 17 Radiant Colors

Add modern, eye-catching color to tablets and 3-D facade letters by specifying U.S. Bronze hard-fired, vitreous enamel. Available in 17 radiant colors plus black and white—this durable material is hard as granite and smooth as glass—requiring no maintenance or polishing.

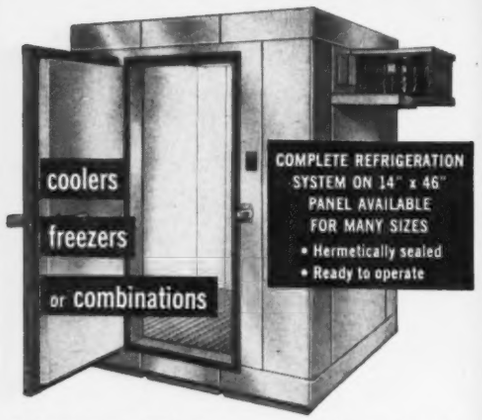
Write today for our free illustrated color catalog plus full information on a complete line of lifetime plaques and letters available in 6 metals plus vitreous enamel—at prices to please any budget.

USB
UNITED STATES BRONZE SIGN CO., INC.
(Free Design Service) Dept. AE, 101 W. 31st St., New York 1, N.Y.

Circle 160 for further information

Bally walk-ins

Aluminum or steel sectional construction



Sanitary! Strong! Efficient! You can assemble any size cooler, freezer or combination in any shape from standard sections. Add sections to increase size as your requirements grow. Easy to disassemble for relocation.

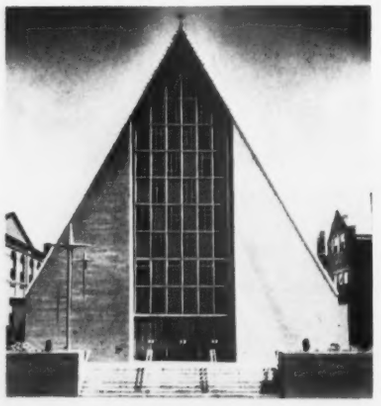
ARCHITECTS: see 8 pages of engineering data in Sect. 26/A of Sweet's Catalog.

Bally Case and Cooler, Inc., Bally, Pa.

Get details—Write Dept. AN-10 for FREE book

Circle 161 for further information

LITERATURE



GLASS CURTAIN WALLS

The use of glass curtain walls in various famous buildings throughout the United States are discussed in a new edition of *Creative Ideas in Glass*. Other aspects of glass in construction are also studied. Photographs of famed buildings relieve the text. (7 pp.)

AIA FILE NO. 26-A

MFR: AMERICAN-SAINT GOBAIN

Circle 357

POCKET HVAC GUIDE

A pocket reference engineering guide contains on both sides of a 3½"x6½" plastic-enclosed card, key data used by designers of air conditioning systems. A psychrometic chart, refrigerant weights, volume, enthalpy and pipe sizes, and approximate heating and cooling operating costs and capacity requirements for such typical applications as office buildings, apartments, schools, hotels, churches and restaurants are included. Conversion and air cooling formulae, sheet metal weights per lineal foot and formulas for determining fixed charges complete the card.

AIA FILE NO. 30-D

MFR: CARRIER CORP.

Circle 358

LIGHTING DESIGNER'S GUIDE

A greatly simplified application guidebook, the "*Area Lighting Designer's and Buyer's Guide*" has just been released. A comprehensive presentation is made of all luminaires, controls, poles, brackets and hardware associated with area lighting as manufactured by company. The Guide also spells out application data, with illustrations and installation recommendations, provides proper footcandle levels and how to achieve them together with other information.

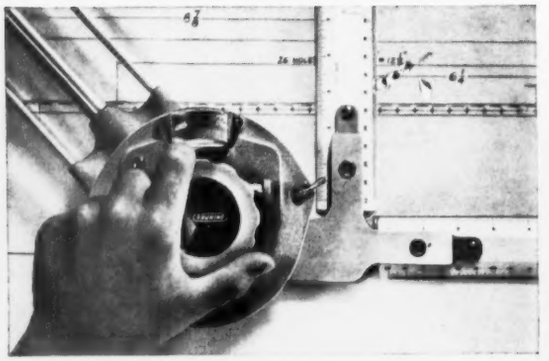
AIA FILE NO. 31-F-2

MFR: GENERAL ELECTRIC CO.

Circle 359

more accurate readings...faster with

NEW BRUNING DRAFTER



Bruning's new Equipoise Drafter, long a "5-in-1 tool" favorite, now brings even greater benefits. For example:

New Magnifier Lens on *totally enclosed* protractor for easier, more accurate readings.

New Elbow Adjuster assures smooth operation on board angles as *high as 25°*.

New Leveling Screws for accurate mounting on boards of moderate warpage.

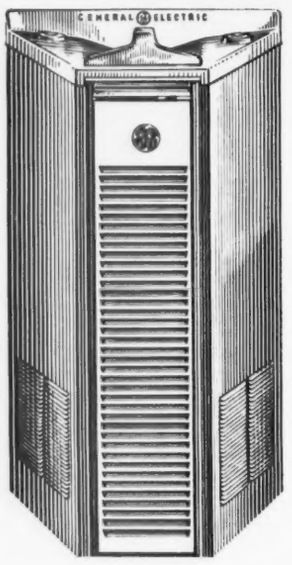
New Baseline Lock for simplified setting.

WRITE FOR BULLETIN A-2873. Charles Bruning Co., Inc., 1800 West Central Road, Mount Prospect, Illinois.

CLEARLY, YOUR CHOICE IS **BRUNING**

Circle 162 for further information

NEW Space-Saving Shape in Water Coolers



GENERAL ELECTRIC'S MODERN, TRAPEZOID FLUSH-TO-WALL DESIGN

●

THREE-WAY APPROACH SAVES AISLE SPACE

●

WALL OR FLOOR MOUNTED & HOT-&-COLD MODELS

●

WRITE FOR:

Architects' Specifications and Complete Line Bulletin. Commercial Equipment Department, Section 761-18, General Electric Company, Chicago Heights, Ill.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Circle 163 for further information

PREVIEW: 35

STATE OFFICE BUILDING	PROJECT
NEW JERSEY STATE DEPARTMENT OF LABOR AND INDUSTRY	CLIENT
FRANK GRAD AND SONS	ARCHITECTS
FARKAS AND BARRON	STRUCTURAL CONSULTANTS
THEODORE J. KAUFFELD	MECHANICAL CONSULTANTS
DUFFY'S, INC.	SPACE PLANNING CONSULTANTS
LEWIS GOODFRIEND AND ASSOCIATES	ACOUSTICAL CONSULTANTS

This 13-story structure, scheduled for completion in June 1963, will house offices of the New Jersey State Department of Labor and Industry. Anticipated expansion of the Department's activities over the next decade or so will be allowed for. Many of the Department's facilities are presently scattered in various commercial buildings in Trenton.

The building will occupy an 8-acre site on a 25-acre tract in the northern end of the John Fitch Way urban renewal project in Trenton. The tract is envisioned as the location of a future complex including additional new state office buildings, under a master plan formulated by the architects for the New Jersey State Office Building Space Commission. The rectangular structure measures 137′ by 249′. Total floor area is 470,000 sq. ft. Parking areas accommodating 260 cars surround much of the building.

The site is accessible from John Fitch Way and Lamberton Street, which borders it on three sides *(see site plan, this page)*.

General design features

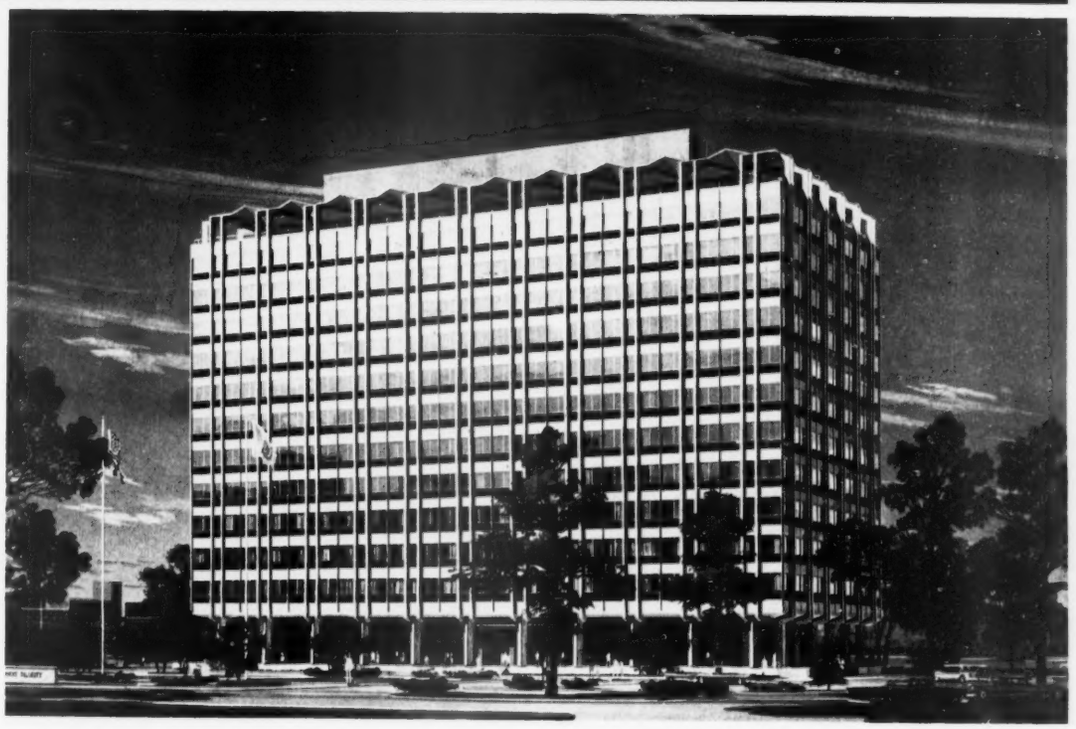
To eliminate damage from possible flooding by the Delaware, the first floor will be largely used for mechanical equipment normally placed in the basement. Housed in the windowless portion of this level are the boiler room and other mechanical spaces. The basement, which will include additional storage spaces and maintenance workshops, will have receiving facilities with direct vehicular access from adjacent streets.

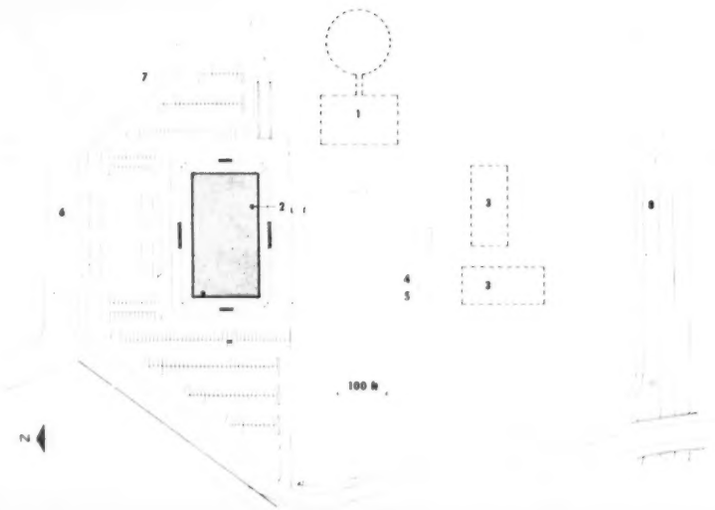
A 17,000 sq.-ft. cafeteria with food preparation and service facilities, serving 1,500 persons in three seatings, is on the 2nd floor, along with office spaces. The 2nd through the 12th floors will house staff working areas. The 13th floor, which is set back from the main structure, has been designated for executive offices, and also houses a meeting room with a 300-seat capacity.

The 1st-floor exterior features exposed columns faced with white marble, black glazed brick, and stainless-steel-framed doors with plate glass. Major part of the building is faced with fixed, tinted, heat-absorbing plate glass; white marble and black ceramic glass spandrels; and extruded aluminum mullions. The 13th floor has a folded concrete plate roof supported by interlacing structural-steel aluminum-covered members.

Structural notes

The frame comprises some 4,000 tons of structural steel. The first floor and its roof are con-





KEY
1 Future building
2 Labor and Industry Building
3 Future buildings
4 Court
5 Pool
6 John Fitch Way
7 Lamberton Street
8 Market Street

SITE PLAN

crete. Exterior columns are supported on steel cantilevers at the 2nd-floor level. The frame consists of steel columns spaced in bays 22′-6″ square and developed from a 4′-6″ square module with integrated mechanical and lighting design. This module was considered the most efficient for illumination and partitioning. Each module contains a continuous row of 2- or 3-tube recessed fluorescent lighting fixtures.

The steel frame makes possible the installation of cellular steel floors, permitting a large degree of flexibility in the finished office space. Floors consist of cellular decking of light-gauge steel that forms a structural section supporting the floor load. At 6″ intervals the sheets form cells which provide raceways for power, telephone and communication system wiring, allowing for a wide variety of placement of outlets for desks and office equipment. Movable steel partitions are used for dividing floor areas into offices.

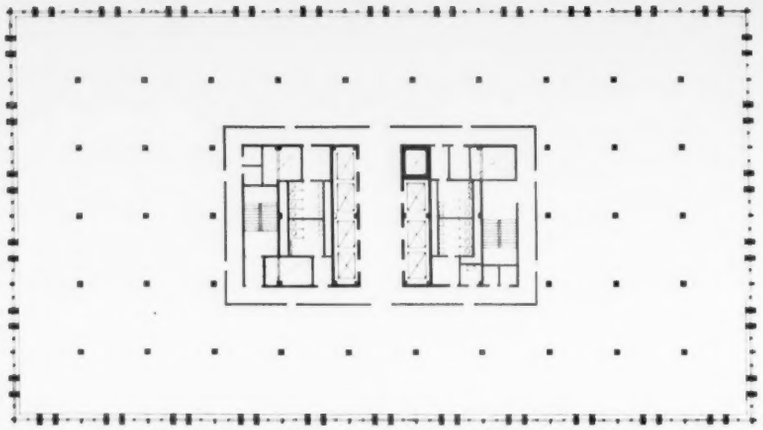
The concrete foundation is supported on 276 piles extending to bedrock. Piling employs 14″ and 8″ *WF* steel columns with an individual minimum bearing capacity of 119 tons. Concrete work is 3,000 psi controlled stone concrete. Basement foundation walls and slabs are designed for hydrostatic pressure based on flood level of 12′ above the basement floor. The following live loads were specified: office areas, 50 lb/sq. ft.; lobbies and stairs, 100 lb/sq. ft.; special equipment areas as required by weight of equipment; roof, 30 lb/sq. ft. The range of wind loads is: up to 50′ height, 15 lb/sq. ft.; 50′ to 200′, 20 lb/sq. ft.; 200′ and above, 25 lb/sq. ft. Two-thirds of wind pressure is applied on the windward side and one-third on the leeward.

Mechanical notes

The building will be heated and cooled by a system that supplies heating, cooling and ventilation to all *occupied* spaces, and heating and ventilation to all equipment and storage areas. Design conditions are to maintain 70° F, 50 per cent relative humidity at 0° F outside temperature (heating); and 78° F, 45 per cent relative humidity with outside conditions at 95° F dry bulb, 78° F wet bulb (cooling). Heating and air-conditioning equipment is on the ground level floor and on an equipment level above the thirteenth floor.

The boiler plant located on the 1st floor level was sized to serve not only this building but also future buildings in the planned complex. Boiler equipment consists of 3 oil-fired steam generators rated at 30,000 pounds of steam per hour at 150 psi, one of which can handle the maximum heating load for this building. Steam distribution to future buildings will be handled by lines housed in a pedestrian tunnel connecting the buildings.

A total of 2,000 tons of air conditioning will be required, which will be provided by two 900-ton motor-driven centrifugal machines, supplemented by one 200-ton motor-driven centrifugal machine to handle IBM equipment areas, meeting room and cafeteria.



PLAN OF TYPICAL FLOOR

Air-conditioning distribution is divided into two separate systems: *perimeter* and *interior*. Heating and cooling of the *perimeter* will be handled by one induction unit per 4′-8″ module of building wall. The building perimeter system is in turn divided into separate zones for north, south, east and west exposures of the building. The induction units in each of these four zones are supplied by a separate high-pressure air-handling system which delivers heated or cooled primary air to the units.

The *interior* area of the building is divided into a north and east zone and a south and west zone. All floors up to the sixth are supplied by low-pressure air handling units located on the ground level equipment floor. Both zones of the 7th to 13th floors are supplied in a similar manner by air handling units located on the top level equipment floor.

Air distribution for both the perimeter and interior systems has been designed for maximum flexibility to permit future rearrangement and subdivision of offices and partitions. Supply and return air for the interior system will be through ceiling diffusers located between light fixtures. Rearrangement of partitions in these areas will require only the relocation of supply diffusers and return grilles within the lighting fixture lines, and the reconnecting of small branch ducts.

The entire system has been designed to provide sound levels of 35 decibels in private offices and 40 decibels in general office areas. Sound attenuation has been accomplished by providing sound absorbers in both perimeter and interior air handling systems.

Electrical notes

Design calls for the main services to be connected to a service bus provided by the utility company. The bus will be 277/480 volts, 3 phase, 4 wire, 60 cycles. These will be two service take-offs, each consisting of 2,000 amp copper feeder bus ducts. One will be 3 pole for 3-phase 480-volt power and the other will be 4 pole to supply the lighting and small power requirements. Each service will terminate in a pressure-type 3,000 amp switch with high interrupting capacity current-limiting devices.

Electrical requirements will be divided into two groups; *first*, power at 480 V, 3 phase, 60 cycle for all motors other than fractional horsepower; *second*, lighting (277/480 V) and small power including convenience receptacle load, which will be fed through dry-type transformers at 120/208 volts.

Emergency power, serving all emergency lighting in corridors and exits, will be provided by a stand-by diesel-driven 40 KW generator in the 14th-level mechanical room.

Lighting system

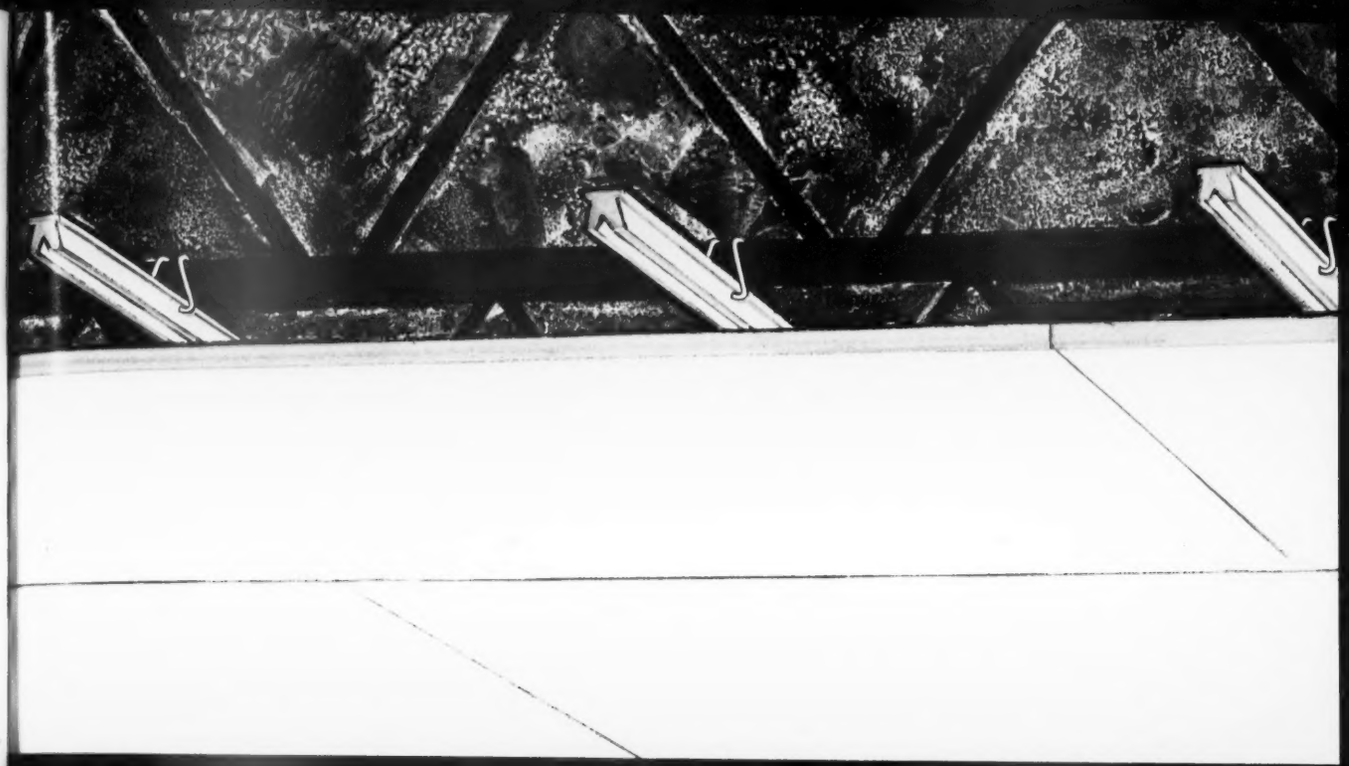
The general lighting layout, similar for each floor, employs recessed fluorescent troffers in semi-continuous rows of 4′ fixtures with a 6″ filter piece. Based on the 4′-6″ module, this conforms to the architectural pattern and allows partition changes without relocating fixtures. The fixtures' wiring trough, however, is continuous for the entire length of the fixture row because of the air diffusers occupying the space between fixtures.

Elevators

The building will have seven self-operating elevators, each electronically controlled, two-way automatic and self-leveling, and with a capacity and speed of 5,000 lbs. at 500 feet per minute.

Cost data

Cost of the building is $10,821,388. Cost per sq. ft. is $23. Cost per cu. ft. is $1.66.



FOR BAR JOIST CONSTRUCTION—
NEW LOW-COST FIRE PROTECTION

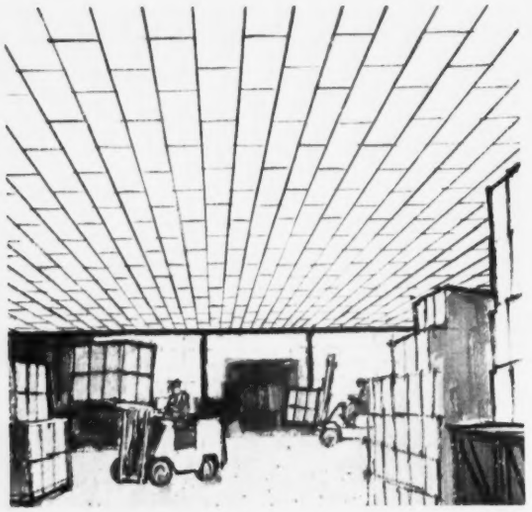
Armstrong Fire Guard Nailing Panel

INFORMATION AND SPECS
ON FOLLOWING PAGES

NEW FROM ARMSTRONG . . .

Fire Guard Nailing Panel to meet your need

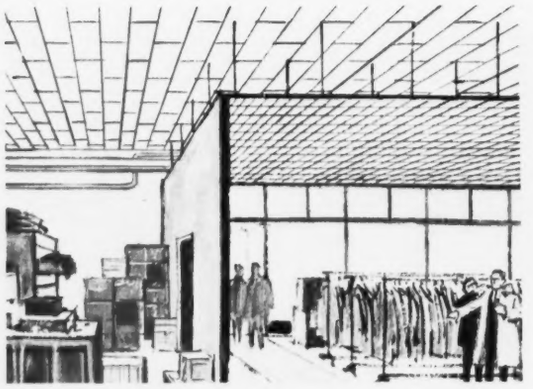
A fire-retardant mineral fiberboard ceiling material, Fire Guard Nailing Panel is designed to provide rated fire protection at low cost for many types of industrial and commercial construction. Easily installed, it eliminates the expensive delays of conventional "wet" methods of fireproofing.



TWO-HOUR ASSEMBLY RATING— THREE-HOUR JOIST PROTECTION

Rated construction of one-, two- or three-hour fire resistance is often required by local codes in basements, warehouses, factories, boiler rooms and similar areas where bar joist construction is frequently used. Fire Guard Nailing Panel has been specially developed for uses of this type. It offers both rated fire protection *and* fast, economical installation.

With concrete slab and open-web steel joist construction, Fire Guard Nailing Panel received an official two-hour assembly rating from Underwriters' Laboratories, Inc. (UL test R4340-1). When the UL test was continued past the three-hour mark, the ceiling of Fire Guard Nailing Panel still provided effective fire protection for the steel joists.



EXCELLENT FOR DOUBLE CEILING CONSTRUCTION

As the upper ceiling, Fire Guard Nailing Panel is attached directly to bar joists to provide necessary fire protection. A conventional acoustical ceiling may then be suspended over those areas of the building where appearance is a prime factor. For instance, a retail store may house both storage and selling areas under a common ceiling of Fire Guard Nailing Panel. Then a finished ceiling, such as Armstrong Travertone(T.M.), may be installed only over the selling area, to meet decorative and acoustical requirements. Future expansion of office and selling spaces can be easily accommodated by simply adding finished ceilings whenever they are required.

Building owners and managers will find Fire Guard Nailing Panel an economical method of providing fire protection in unleased areas of a building. Future tenants can select finished ceilings at the time of occupancy.

PRIMED SURFACE FINISH

The surface of Fire Guard Nailing Panel is a smooth primed and ironed paint finish that gives a clean, trim appearance. This surface also will provide an excellent base when an additional paint finish is desired.

for low-cost membrane fire protection

SAVES UP TO SIX WEEKS' CONSTRUCTION TIME

The delays in construction caused by conventional "wet" methods of fireproofing are completely eliminated with Fire Guard Nailing Panel. No extra moisture is introduced into the building. The large, lightweight, easy-to-handle panels go up quickly and easily. Construction time can be reduced up to six weeks.

EASY INSTALLATION

Installation is accomplished by attaching standard type nailing channels directly to bottom chords of steel bar joists. Fire Guard Nailing Panel is then nailed to the channels.

Staggered end joints of the Nailing Panels are reinforced at each intersection by a steel bridging clip.

To insure that installation will achieve the desired time-design rating, step-by-step installation specs are included with each bundle of material (see following page).

CONVENIENT SIZE

Nailing Panel is manufactured in 22½" x 64" x ⅝" size so that each unit consists of ten square feet. It is packed eight pieces (80 square feet) per bundle.

OVER

Specifications for new Armstrong Fire Guard Nailing Panel

MATERIAL

Membrane fire protection shall provide (two-hour, three-hour) protection for structural steel, as tested by Underwriters' Laboratories, Inc. Membrane fire protection shall consist of incombustible mineral fiberboard attached to standard type nailing channels.

a. Incombustible mineral fiberboard shall be Armstrong Fire Guard Nailing Panel as manufactured by the Armstrong Cork Company. Nailing panels shall be nominal 22½" x 64" x ⅝" in size and shall be factory-sanded with a primed and ironed paint finish. Nailing panels shall be incombustible and carry the Underwriters' Laboratories Fire-Retardant Classification label.

b. Nailing channels shall be fabricated from electrogalvanized steel of a minimum thickness of .020". Couplings for splicing the nailing channels shall be as recommended by the manufacturer of the nailing channel.

INSTALLATION

The fire-protective membrane shall be installed in strict accordance with the manufacturer's recommendations and in such a manner as to achieve the specified fire-retardant time-design rating.

a. Installation of nailing channel. The contractor shall furnish and install nailing channels. The nailing channels shall be attached to the bottom chords of steel bar joists (or to 1½" carrying channels) with double strand of #18-gauge tie wire or suitable-type nailing clips. Tie wires or clips should be placed at such intervals that the span of nailing channels does not exceed 48". The nailing channels shall be spaced approximately 16" on center at right angles to the supporting members. Nailing channels shall be spaced approximately 3" from walls paralleling the direction of the nailing channels. Approximately ¾" clearance shall be maintained between the ends of the nailing channels and the walls perpendicular to the direction of the nailing channels. Where adjacent channels are spliced together, clearance of approximately ½" shall be maintained between ends of nailing channels.

b. Installation of nailing panels. The contractor shall furnish and install Armstrong Fire Guard Nailing Panels. The nailing panels shall be applied with the long dimension at right angle to the nailing channels, staggering the end joints so they fall between the nailing channels in each succeeding course. Panels are attached to the nailing channels at each bearing with a 1⅛" annular steel nail, spaced approximately 6" on center. Diameter of nailheads shall be approximately ⅜". Staggered end joints of the nailing panels shall be reinforced by inserting a 20-gauge steel bridging clip at each intersection.

FOR INFORMATION on the availability of new Armstrong Fire Guard Nailing Panel contact your Armstrong District Office or write direct to Armstrong, 4200 Richard Road, Lancaster, Pa.

ARMSTRONG OFFICES

ATLANTA, GA.
727 West Peachtree St., N.E.
TRinity 5-7201

BOSTON, MASS.
200 First Avenue, New England Industrial Center, Needham Heights 94. Hillcrest 4-5700

CHARLOTTE, N. C.
1127 East Morehead Street.
EDison 3-7741

CHICAGO, ILL.
6535 West Irving Park Road.
PEnsacola 6-9440

CINCINNATI, OHIO
1057 Meta Drive. ELmhurst 1-3330

CLEVELAND, OHIO
2975 Superior Avenue. MAin 1-7900

DALLAS, TEXAS
2727 Oak Lawn Avenue.
LAkeside 6-7468

DENVER, COLO.
35 West 5th Avenue. CHerry 4-0543

DETROIT, MICH.
Free Press Building, 321 Lafayette Ave., West. WOodward 3-8322

KANSAS CITY, MO.
500 West 26th Street. VIctor 2-9154

LOS ANGELES, CALIF.
5983 E. Smithway Street.
RAymond 3-9381

MINNEAPOLIS, MINN.
4539 Hiawatha Ave. PArkway 1-2447

NEW YORK, N. Y.
60 West 49th Street, Rockefeller Center. JUdson 2-3700

PHILADELPHIA, PA.
301 City Line Avenue, Bala-Cynwyd. TEnnyson 9-6640

PITTSBURGH, PA.
24th St. & Allegheny River.
ATlantic 1-7474

ST. LOUIS, MO.
1919 Hampton Ave. MIssion 7-3200

SAN FRANCISCO, CALIF.
1814 Ogden Drive, Burlingame.
-OXford 2-1833

SEATTLE, WASH.
221 Minor Ave., North. MAin 3-2772

CANADA
6911 Decarie Boulevard,
Montreal 29, Quebec

Armstrong FIRE GUARD NAILING PANEL

DOCUMENTS

The documents listed below are available through the associations and agencies cited. All requests should be directed accordingly.

Department of Architecture and Architectural Engineering, University of Kansas, Lawrence, Kansas.

Experiments with a single layer plywood monkey saddle shell *by William Strode and Donald L. Dean, 1961. 28 pp. Available on request.*

Describes experiments carried out in the spring of 1959 by the Department of Architecture and Architectural Engineering at the University of Kansas, using the "monkey saddle" design. This was the second of a series of experimental research projects sponsored by the Douglas Fir Plywood Association under the direction of Professors Dean and Strode at the University.

The booklet covers general membrane equations, geometry and structural analysis of the monkey saddle, testing and selection of joints, construction and joint failure, reconstruction and natural load tests. All data was acquired from tests on an experimental monkey saddle structure put up by students on the university campus.

Includes formulas, tables, sketches and photographs.

Electric Cord Company, Handbook Department, 432 Plane St., Newark 2, N.J.

Emergency Lighting Handbook, *1961. 96 pp. $2.00.*

Provides basic information on installation, equipment specifications, and maintenance requirements for emergency lighting, for the benefit of architects, engineers and consultants.

Details reasons for emergency lighting, probability of power, legal considerations, installation design factors such as key points requiring illumination, size and shape of areas, illumination requirements, duration, and source location; wiring requirements; diagrams showing typical installations; types of equipment commercially available; exit lighting; and maintenance requirements.

American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.

1961 Book of ASTM methods for chemical analysis of metals. *722 pp. $11.00. ASTM members: $8.80.*

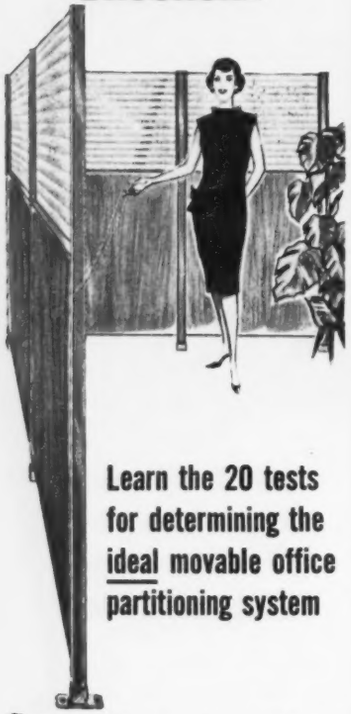
For Current Construction

Westinghouse
Westinghouse Announces— a new specifying manual for a complete new line of panelboards
Courthouses or cocktail lounges; hospitals or motels; factories or schools, the Westinghouse Panelboard QUIK SPECIFIER will make your spec writing or purchasing job easier and faster.
If you haven't received your QUIK SPECIFIER, write to Westinghouse Electric Corporation, Box 868, Pittsburgh 30, Pa., and our salesman will deliver your free copy. For all your electrical needs, you can be sure — if it's Westinghouse. J-93556
PANELBOARD
QUIK SPECIFIER
with the new "A" line AB De-Ion Circuit Breakers

Circle 165 for further information

←Circle 164 for further information about ARMSTRONG CORK

BEFORE YOU BUY OFFICE PARTITIONS, SEND FOR YOUR "CHECK THE FACTS" BROCHURE



Learn the 20 tests for determining the ideal movable office partitioning system

Selecting office partitions isn't easy . . . it's an investment you have to "live with" daily. Haskelite's "Check the Facts" brochure has a check list of 20 requirements that an ideal partitioning system must meet. This check list will enable you to "test" any of the various partitioning systems now available. That way, you can judge for yourself the merits of different partitions—and make the *right* choice when *beautifying* your office space in a *practical* way.

HASKELITE EXEC-UNITS®

. . . ideal movable office partitions

HASKELITE MANUFACTURING
DIVISION OF EVANS PRODUCTS COMPANY
GRAND RAPIDS, MICHIGAN

Please send "*Check the Facts*" brochure

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE_____
A.E.

Circle 166 for further information

NAMES

WILLIAM LESCAZE, FAIA is a man of many opinions, a recent example being remarks he made at the opening of the Manhattan City and Municipal Courts Building, which he designed. "What I am pleading for is not a new subsidy. It is simply a plea that the relationships between architect, sculptor and painter be acknowledged and provided for by our building agencies or private builders so that architects, sculptors and painters may work again together, dream again together, and, thereby, make that wonderful and simultaneous creation happen again—as it should, and as it did, in the Renaissance."

As an early protagonist of the modern movement, Lescaze has been linked to the problems of an integration of the arts in our buildings for a long time. "Today," he has said, "we have achieved an expression of our civilization in our buildings. A civilization implies a culture. I don't see how culture can be expressed forcefully to people, or to other nations, except by a remerging, a sort of bringing together again, of the arts (painting, sculpture, and glass) in our buildings. They are not mere decoration. They are functions of the message of the total building. . . . To show the difference between past and present, I avoided art in the Philadelphia Savings Fund Society Building because there was no art singing the same song in 1932."

Born in Geneva, Switzerland, in 1896, Lescaze studied at the College of Geneva and received his Master of Architecture degree from the Federal Institute of Technology in Zurich. In 1919 and 1920 he worked in the war devastated areas of France, coming to the United States in 1920. He became a citizen in 1929.

After three years in Cleveland as a draftsman, he established his own architectural firm in New York City in 1923. In 1929 he entered into partnership with the late George Howe, and established offices in New York and Philadelphia. Since 1934, he has had his own firm in New York. Lescaze married Mary Connick Hughes in 1933 in New York, and they have one son, Lee Adrien.

In addition to the PSFS building in Philadelphia, Lescaze has designed a number of important projects, among them the CBS headquarters in Hollywood; the Longfellow Building in Washington, D.C.; and the Williamsburg Houses in Brooklyn, N.Y., said to be the first housing project with buildings situated for proper orientation, and not parallel to streets.

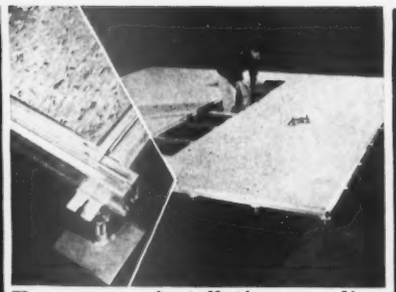
Lescaze has written three books: *Architecture for the New Theater*, 1935; *The Intent of the Artist*, 1941; and *On Being an Architect*, 1942, in which he points out that "the question of modern architecture versus period styles is fundamentally not a question of architecture. It is a question of life versus stagnation. . . . Vital architecture has always understood and interpreted life."

In 1949, Governor Dewey of New York appointed him to the State Building Code Commission. He was made a Fellow of the AIA at the 1951 convention.

A visit to the Lescaze office gives one the impression of watching a typical motion picture scene about a busy executive. It is a scene punctuated by a seemingly unending number of telephone calls and interruptions by secretaries and staff members. Through it all, however, Lescaze never loses the thread of his conversation. He is obviously conditioned to being busy.

In looking back on his experiences in this country, he notes great changes in the general attitude toward modern architecture. "We have advanced so far in the last 20 years that design of buildings such as the Chrysler buildings has all but disappeared. In the past, those who did noble buildings, banks with columns, etc., had only contempt for us. We were to be repressed. Today very few do purely traditional kinds of buildings. Many don't know how to make a modern building, but at least they copy the forms of modern buildings."

In the final analysis, one can best describe William Lescaze and his attitude towards his profession in his own words—"It is not the articles you write, or the articles written about you, but the buildings you build." *PG*



For every installation needing strength and rigidity . . .

ELAFLOR*

FREE-ACCESS FLOORING

There are several types available . . . from the top they generally look the same. Underneath, it's a different story. Visit an installation of any brand, lift a panel, rock a pedestal. You'll *see* the difference between ELAFLOR and the others. But, you can save lots of time by referring to our literature . . . the facts and drawings are all there.

*Pat. App. For

Write for 34 page "Construction Details" Folder

LISKEY ALUMINUM, INC.

Friendship International Airport, Box 506, Glen Burnie, Md.; *Canadian Rep.—Cameron Windows (Aluminum) Ltd., 142 Kennedy Rd. S., Brampton, Ontario*

Circle 167 for further information

new floors OVERNIGHT! ready for Heavy Traffic with

STA-CRETE

epoxy resins

Maintenance men specify **STA-CRETE** to solve hundreds of maintenance problems. Practically indestructible. **STRONGER THAN CONCRETE. STA-CRETE** epoxies are the solutions for repairing, resurfacing, patching, bonding, strengthening, water-proofing, and just plain wear and tear problems. Economical and easy to handle. Use only what you need; your supply will never deteriorate. Surface ready for heavy traffic over night.

See your dealer or write

STA-CRETE, INC.
115 New Montgomery St.
San Francisco 5, Calif.

for
Industry
Agriculture
Warehouses
Office Buildings
Institutions
Refineries
Plants
Highways

Circle 168 for further information

BOOKS

Physical Urban Planning *by Sergei N. Grimm. Syracuse, N.Y.: School of Architecture, Syracuse University, 1961. 87 pp. $2.00, less for large orders. Obtainable from Syracuse University Press, P.O. Box 87, University Station, Syracuse 10, N.Y.*

The goals of a profession do not necessarily change over the years, but techniques may undergo a gradual shift as previous methods prove inadequate to the task. This little book reflects such a shift as advocated by some sections of the urban planning profession.

Physical urban planning represents a transcript of lectures given at the University of Syracuse School of Architecture by Sergei Grimm, formerly executive director of the Syracuse City Planning Commission. It bears the subtitle "System of General Concepts and Principal Features," and it presents certain planning concepts that indicate a definite shift from current thinking.

This centers around zoning and land planning, or "space planning," as the author prefers to call it. Briefly, Mr. Grimm considers obsolete current zoning practices which set zones apart from each other purely on the basis of activity (i.e. residential, industrial, and other). Instead, he advocates the idea of "quality-of-environment." The aim of this is to take into account *all* conditions (man-made and natural) that are likely to influence an environment, not merely the chief activity of the inhabitants.

A logical outgrowth of this approach is to change current zoning categories to a new series which would rate land use on the basis of total environmental effects:

"A series of levels of environment could be defined for uses of land recognized now as nonresidential. A modern insurance company headquarters may fit into a higher level of environment than a large apartment building, and a modern industrial plant may be a better neighbor than an institution. Yet an apartment over a store in a business district would be on the level of environment usually found in such a district."

Another planning god which the author rattles on its pedestal is the concept of the neighborhood unit. He feels that each planning problem deserves treatment on its own merits, adding that excessive emphasis on the self-contained "cell" or neighborhood unit complicates the planning process. "The complexity of the urban organism," he adds, "is too

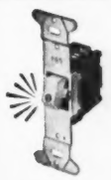
(Continued on page 82)

NOW! 3 NEW

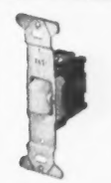
P&S ROCKER-GLO SWITCHES!

all available in Despard (interchangeable) type or strap type

No. 2211-SL



No. 2221-SP



No. 2225-S

1 LIGHTED HANDLE ROCKER-GLO
- Pinpoints switch location in darkened areas
- Long-life neon lamp glows in OFF position only
- Single pole or three way. Rating: 15 Amps., 120 V, A.C.

2 PILOT LIGHT HANDLE ROCKER-GLO
- Instantly shows when appliances or lights are on.
- Tiny red jewel lights in ON position only.
- Single pole only. Rating: 15 Amps., 120 V, A.C.

3 REMOTE CONTROL ROCKER-GLO
- Momentary contact, center "off" switch
- Designed especially for low voltage remote control operations
- Single pole, double throw. Rating: 10 Amps., 48 V, A.C.

For more information write Dept. AE1061

P&S PASS & SEYMOUR, INC.
SYRACUSE 9, NEW YORK

60 E. 42nd St., New York 17, N.Y. 1440 N. Pulaski Rd., Chicago 51, Ill. In Canada Renfrew Electric Co., Ltd., Toronto, Ontario

Circle 169 for further information

SPEAKMAN
EASY PUSH

water-saver **metering** shower and lavatory fitting

Permits washing and bathing in tempered water*

Speakman EASY-PUSH Shower S-1185 (Exposed Type)
Meters water accurately. Integral stop in valve controls volume. Equipped with Anystream® self-cleaning showerhead. Vandal proof.

Speakman EASY-PUSH Lavatory Fitting S-4171
Self-closing metering combination with VANDL-RATOR® (see below). Volume adjustment which can be regulated after installation. Self-cleaning by-pass. Valves will fit any lavatory with standard 1¼ inch diameter openings.

Speakman Concealed VANDL-RATOR®
Built-in aerator with non-splash features for lavatory and sink faucets. Discourages vandalism and malicious removal.

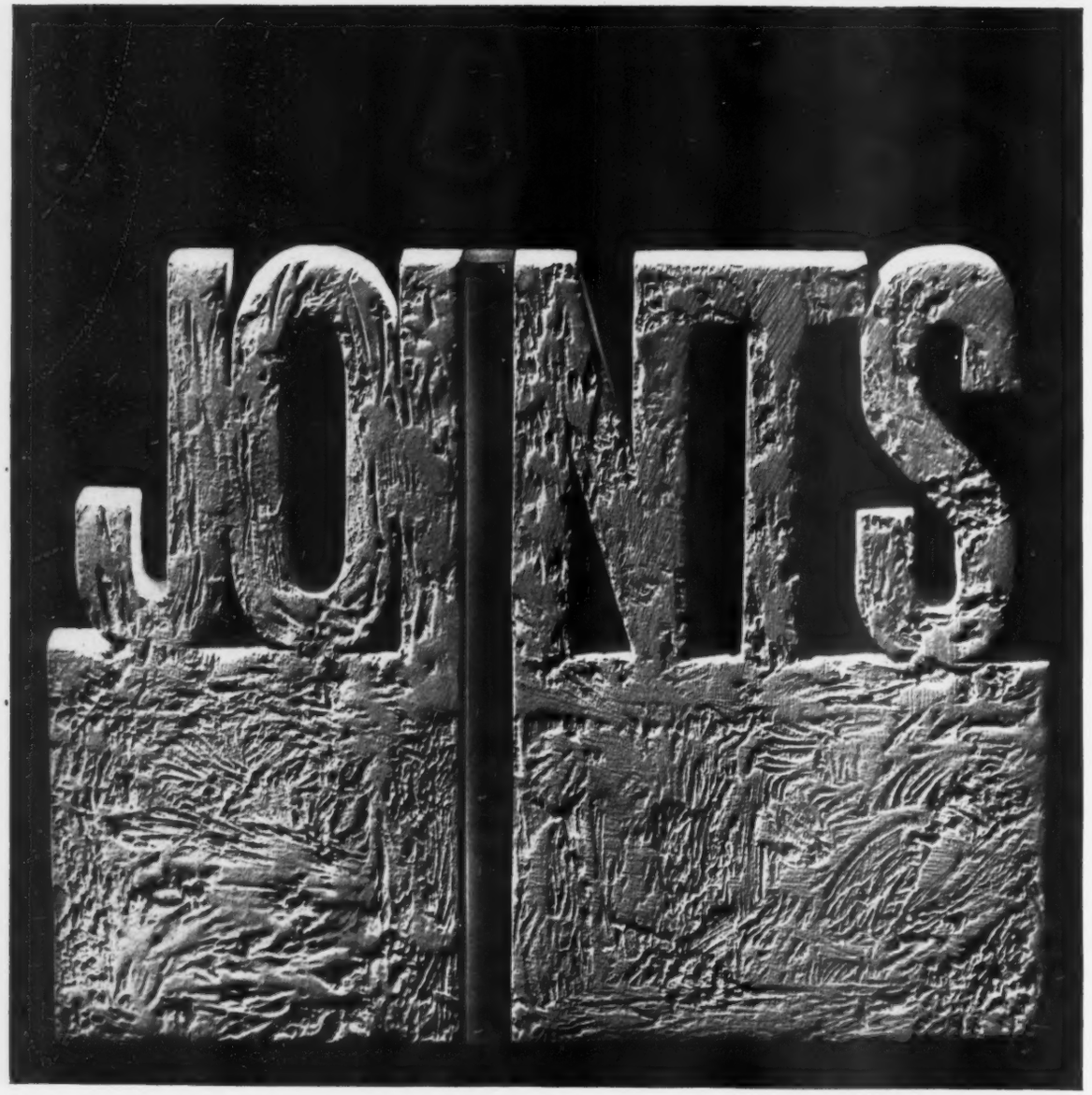
*Caution: Temperature Control Unit necessary in supply lines

Get details—write Dept. AN for catalog S-94

SPEAKMAN COMPANY WILMINGTON 99, DELAWARE

In Canada write CUTHBERT-SPEAKMAN, MONTREAL 3, CANADA

Circle 170 for further information



No building is better than its weakest joint—or the material used to make it watertight ■ Sealant based on THIOKOL liquid polysulfide polymer does more than fill joints and shed water... it adds structural strength, unique among caulking compounds ■ Custom-applied to the job on the job, polysulfide-type sealant conforms automatically to all joints regardless of size or shape. No cutting, no splicing, no vulcanizing, no compression is ever required to produce and maintain a watertight seal. Worrisome departures from original joint design which inevitably occur between drafting board and construction site can be compensated for instantly ■ Sealant containing THIOKOL polysulfide polymer welds itself chemically to all building materials in any combination. Expansion up to 100% cannot break its steel-grip bond, while its outstanding resistance to sun, freezing, moisture, ozone, chemicals and aging assures trouble-free weatherproofing for extended periods of time ■ ASA Specification A 116.1 sets quality and performance standards for polysulfide-type sealant. Make it your guide on your next assignment. There is only one polysulfide polymer. And it's produced by Thiokol.

Thiokol®
CHEMICAL CORPORATION
780 N. Clinton Ave., Trenton 7, N. J.
In Canada: Naugatuck Chemicals Division, Dominion Rubber Company, Elmira, Ontario

Circle 171 for further information

BOOKS

(Continued from page 81)

great to analyze or guide its changes and growth by limiting one's thinking to any cellular pattern."

Other sections deal with ancillary problems such as harmonizing different zones along their boundaries; improving environment; controls; balancing controls among themselves and with any improvements; land planning and forecasting; and public works projects.

The final section of the book deals with the relations between public and private planning. In it the author deplores the tendency to "look to public planning as the source of an answer to new problems, without first considering whether it should be a matter of public or private concern." He is also at some pains to suggest that one define properly that much abused term "the public" before assigning to such a public specific desires and motives.

This volume should be useful both to students of planning and to practitioners. *SAK*

The Employment Interview *by Milton M. Mandell. New York, N.Y.: American Management Association, 1961. 110 pp. $4.50.*

Study of the problems of the employment interviewer, based on an AMA survey of 273 firms. Covers the attributes of a good employment interviewer and the inadequacies inherent in the standard system of application and interview for personnel procurement. Investigates the experience and training necessary for a good interviewer.

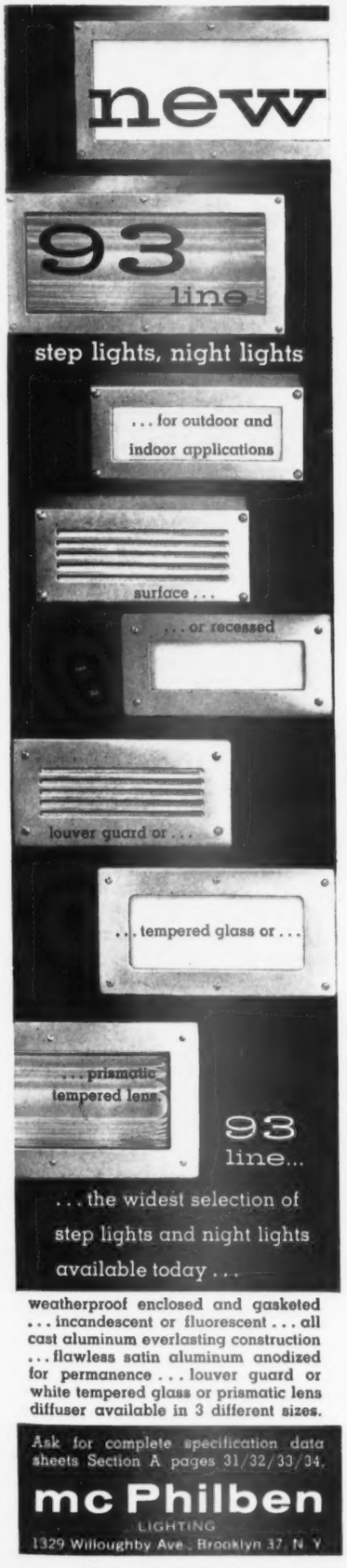
The Marketing Job *edited by Elizabeth Marting. New York, N.Y.: American Management Association, 1961. 448 pp. $9.00.*

Modern concepts of the industrial marketing function and the broadened responsibilities of the marketing director are explored. The marketing director is pictured as a full fledged member of the marketing team, with important responsibilities for the overall profitability of a company.

The book is a symposium of the views and experiences of 47 marketing executives and specialists.

French Cathedrals. *Photographs by Martin Hurlimann, introduced by Jean Bony. New York, N.Y.: The Viking Press, 1961. 311 pp. $12.00.*

The most celebrated achievements of Gothic architecture are illustrated in 199 pictures taken in France in this new, slightly enlarged edition.



weatherproof enclosed and gasketed . . . incandescent or fluorescent . . . all cast aluminum everlasting construction . . . flawless satin aluminum anodized for permanence . . . louver guard or white tempered glass or prismatic lens diffuser available in 3 different sizes.

Ask for complete specification data sheets Section A pages 31/32/33/34.

mc Philben
LIGHTING
1329 Willoughby Ave., Brooklyn 37, N. Y.

Circle 172 for further information

DIGEST: 34

SAFETY, SECURITY, AND THE PUBLIC ENTRANCE DOOR

A review of architects' design criteria

by Gustave R. Keane AIA

DIGEST *this month presents a set of architects' design criteria and a comprehensive check list for public entrance door selection. The article has been adapted from a paper given at the latest Building Research Institute conferences in Washington. The author is production administrator in the office of Eggers and Higgins, architects.*

DESIGN CRITERIA

Listed below are the 7 design criteria for use by architects in locating, designing or selecting a public entrance doorway. Each criterion is discussed in further detail under its own heading.

I. Function of the building.
II. Ingress and egress capacities.
III. The entrance as an aesthetic design element.
IV. Safety, ease of operation under all loadings.
V. Security against unauthorized entry.
VI. Maintenance and weather tightness.
VII. Budget considerations.

I. Function of the building

Enumerated below are 8 types of buildings listed in descending order of peak load concentrations:

a Legitimate theaters, assembly halls, race tracks.
b Multi-tenant office buildings, department stores.
c One-tenant office buildings.
d Public schools.
e Transportation terminals.
f Churches.
g Hotels, apartment houses, hospitals.
h Libraries, banks.

II. Ingress and egress capacities

Egress requirements are governed by one or more of these codes, regulations or recommendations:

Name of Publication	*Issuing Authority*
a Local Building Code	Municipal Government
b State Building Code	State Government
c National Building Code	National Board of Fire Underwriters
d Building Exits Code	National Fire Protection Association
e Basic Building Code	Building Officials Conference of America
f Uniform Building Code	Pacific Coast Building Officials Conference
g Southern State Code	Southern States Building Officials Conference
h Western State Code	Western States Building Officials Conference
i Labor Law	Federal and State Government
j Public Health Law	Federal Government

In fulfilling the requirements of the appropriate codes, the architect should remember that the prescribed standards are *minimum* standards. *Maximum* exit facilities should always be provided through the usual paths of ingress and egress regardless of emergency facilities.

III. The entrance as an aesthetic design element

With the required number and sizes of entrance door units established by computation plus judgment as described in criterion No. II, one must next consider the function of the building in order to solve criterion No. III, namely aesthetic design.

The entrance will naturally have to harmonize with the style of the building but degrees of emphasis or de-emphasis will come into play. For instance, while a secondary entrance to a church building may be deliberately de-emphasized, the secondary entrance to a department store will be played up to the hilt, and made as inviting as possible.

IV. Safety, ease of operation under all loadings

(a) *Fire and panic situations.*

The safety potential of an entranceway starts with its strategic location within the building plan. The flow of traffic, especially during panic situations, must be given particular consideration with special emphasis placed on smoothness of flow, without pockets or eddies. For these reasons the entranceway should preferably be in a direct line with the main banks of elevators or other concentrations of occupants. It should easily be identifiable as an exit by its *location* and *choice of materials* rather than by relying on a series of directional signs; and it should terminate in a location where the occupants will be able to disperse quickly without interfering with sidewalk traffic.

This is one reason why main entrances should preferably be recessed from the building line; apart from shielding the doors from the weather, the recessed entrance is also useful as a transition element in reducing slipping hazards due to wet or icy pavements.

Panic exit devices should be substantial and extend across the entire opening, even if this means a slight compromise with the design concept. They should be properly labelled and approved by the Underwriters Laboratories as accident equipment.

(b) *Accident prevention in normal use.*

Depending on climate, height of building and use of the lobby, the decision will be made whether to use double banks of entranceways with a shallow vestibule wind-catcher between them, or whether to use a single bank of entrance doors with or without revolving doors. Modern motor driven revolving doors are run at a maximum speed of 12 RPM which has been found quite safe even for elderly people. At that speed they will allow 2280 people per hour to enter and the same number to exit simultaneously without mutual interference. The revolving door has also another advantage in that it creates its own traffic lane pattern, which continues for a considerable distance into the lobby. A vestibule-windcatcher should extend in depth a minimum of 3 × the width of the door leaf leading into it. Anything below that figure will not work out, as it will create interference among the users.

One frequently neglected safety aspect is proper lighting. This becomes especially critical with the use of frameless glass and side lights. Remedies depend on the time of day, and include a strategic use of spotlights and higher levels of lobby illumination.

(c) *Ease and convenience of normal operation.*

The next step will be to decide on the type of door

operation itself; whether manual, semi-automatic (as revolving doors or hand triggered devices), or fully automatic motor-driven doors, triggered by pressure or photo-electric cells.

Hardware chosen must be co-ordinated with the door manufacturer to assure sufficient room for mounting it without weakening frames and styles beyond the limits of safety.

V. Security against unauthorized entry

This must be studied in conjunction with criterion No. I (Function of the building).

Many transportation terminals remain open 24 hours a day and locks therefore become superfluous.

In many city office buildings security is a minor factor because lobbies are designed in such a way that doors leading from them to stairs, elevators and basements are locked from the lobby side; an unauthorized person entering through the main entrance after hours is still faced with the lobby watchman. Good quality cylinder locks of average complexity will, therefore, suffice for these applications.

Public entrance doors for all other buildings should be designed with emphasis on keeping unauthorized persons out. Cylinder locks must be selected to foil the superior lock-artist, and the door itself must be made stiff enough to withstand jimmying.

The panic devices must be selected and placed in a way that will make it impossible to operate them by means of a hooked wire from the outside; this applies particularly to pairs of doors mounted without mullions or astragals. If astragals on double doors are used the coordination must be fool-proof so that the doors will lock positively every time.

Dead bolts in an inactive door should have a positive locking feature; if only the top one locks, it becomes possible to rack some doors and spring the latch back on the active door.

Public entrance doors should be locked both *top and bottom*. This advice is borne out by the great number of broken glass doors and racked metal-glass doors resulting from reliance on top *or* bottom locks *only*.

VI. Maintenance and weather tightness

Safe operation of the entire assembly is jeopardized if the mechanical parts are not properly maintained.

This seems obvious on a fully automatic door operator installation, but it applies equally well to even the simple manual door. If, for instance, the threshold pocket for the actuating bolt is not kept clear and therefore only the top of the door is kept in place, sooner or later the door will be forced out of alignment and will never close properly from then on. Improperly maintained panic exit devices will fail to latch automatically. The result is loss of security, or, worse, a door which jams during an emergency.

Glazing should be checked for looseness. Maintenance workers should be instructed to remove the common "use next door please" sign during rush hours. Door finish and its lacquer coating should be properly protected during construction.

VII. Budget considerations

The entranceway is both the first and last part of the building which a visitor sees and uses. In view of this fact, and, even more important, of the architect's responsibility for safe design, the budget for the entranceway should have a highly preferential status.

CHECK LIST

Preliminary selection should be checked against the following points:

a Will the door accommodate traffic flow smoothly during peak or panic loads?

b Will it do the same during normal loads? Will two users approaching it from opposite sides interfere with one another?

c Is there a possibility that a user may injure himself by mistaking a fixed side panel for a door? Would the use of safety laminated glass be advisable? Perhaps with a colored or decorative membrane?

d What provisions are being made to prevent in-going and out-going persons from colliding with one another or from being struck by the door?

e Can the outswinging door injure a pedestrian walking along the side of the building?

f Is illumination of lobby and loggia designed to prevent accidents?

g On automatic doors, what provisions are made for safe manual operation in case of breakdown?

h If over-lapping astragals are used on a pair of doors, what type of co-ordinator can be incorporated into the design? The right hand leaf as viewed from direction of egress must be the active door.

i Can speed of the closing device be properly controlled?

j Will stack effect or wind pressure on the door prevent its easy operation? What provisions are made to overcome different wind loadings?

k Does design of the stiles and rails permit application of substantial reinforcing and hardware?

l Is adequately heavy jamb and head reinforcement provided which will prevent stripping of screw treads and sagging, causing the door to jam.

m If a floor hinge type door-holder is provided, is it located where a user cannot trip it accidentally, causing door to strike a person closely following?

n Is threshold raised to clear obstructions and unevenness of sweep area and does it feather out to surrounding finishes? What non-slip provisions are made? Will dead bolt socket catch ladies' heels?

o Is the mat sinkage drained so that accumulation of snow and slush on it won't obstruct door swing?

p What are the provisions made at the jambs to prevent injuries to children's exploring fingers?

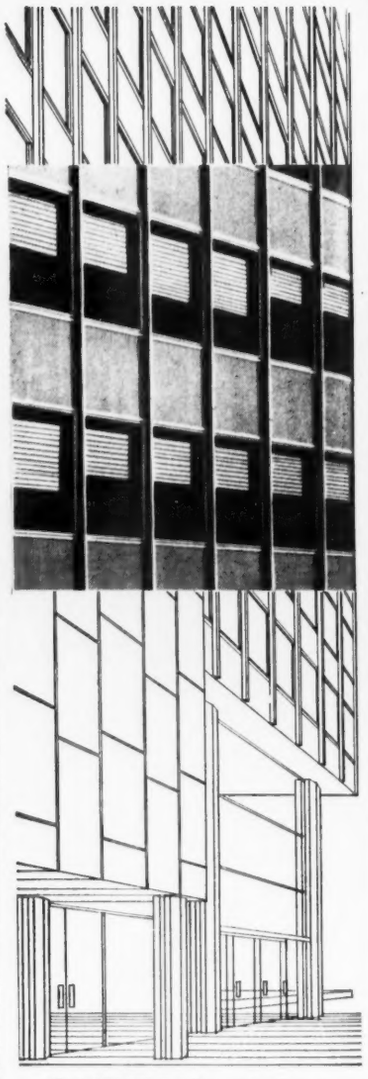
q Is construction of frames and doors substantial enough to stand up in prolonged use without racking and eventual glass breakage?

r In a bank of doors, will door holders positively prevent protruding door pulls from being struck by the adjoining door? This has happened because most door holders will *hold* a door at 90°, but will first permit it to open to about 97°.

s Is there an adjustable speed governor fitted to the revolving door to prevent "heel snapping"?

t Is design of the push bars sufficiently *asymmetrical* to make latch side of door obvious to a visitor?

u Will the assembly be weather tight?



CURTAIN WALL

A refreshing new approach to metal curtain wall construction — Series 400 by Albro. It combines new design flexibility with light weight, economy and fast installation. Albro fabricates a complete line of aluminum, bronze and stainless steel systems — all backed by over 30 years of metal engineering know-how. See them in Sweets or write

ALBRO
Metal Products Corporation
944 Longfellow Avenue
New York 59, New York

Circle 173 for further information

EDITORIAL

EERO SAARINEN FAIA

WIDE WORLD

A famous architect is many things to many people. To the student he is a hero, a subject of veneration, a model to be praised, studied, emulated, and, sometimes, understood. To the recent graduate serving his apprenticeship in the practical world of his first office, he becomes less of an idol, more profoundly understood, and emulated at one's risk or to one's advantage, depending on the circumstances. To the apprentice-now-turned-practising-architect he becomes an extension of, or an antithesis to, his own evolving philosophy of architecture: closely disciplined or broadly imaginative; teaching by example or from a university rostrum; practising as executive in a well-populated office, or as lone wolf of the occasional statement. To the man-in-the-street he is often an image created by printed views: good or bad, insensitive or refined, reactionary or progressive, practical or extravagant—depending on the writer's inclination. *De gustibus . . .*

As for the famous architect himself, the years pass; his own experience and changing times leave their mark on him; and he either moves forwards, or consolidates, or lapses into well-established aesthetic clauses.

The evolution of one famous architect is now suddenly complete. It was a marked evolution, unpredictable, forthright. It signalled a modern man, one who bent the materials to his purpose and technology to his imagination; one to whom no form was taboo and by whom little new was left untried. He was one who spun no evident philosophic web, and who was thus bound by none. As his last designs take on their third dimension and his first ones creep into the textbooks (like his father's before him) he leaves to this world the wistful and recurring thought that he still had much to offer it. He died last month, aged 51. *SAK*

AirWall®
PATENTED
PNEUMATIC PARTITIONS OFFER UNLIMITED DESIGN FLEXIBILITY

"AIRWALL" Pneumatic Partitions in the Drake Hotel, Chicago, Illinois.

"AIRWALL" Pneumatic Partitions offer architects a completely new concept of design flexibility for interior walls. "AIRWALLS" provide a lightweight, completely portable wall that can be used anywhere to divide floor areas into useable rooms. No floor or ceiling tracks are required . . . "AIRWALLS" can be shifted at will . . . in a matter of minutes. Each panel is set in place and the Airseal is inflated to lock the panel in position . . . provides a tight seal at floor and ceiling levels. This tight seal plus "AIRWALL's" unique construction provides a sound control never before possible in a portable wall.

Individual panels are 36" wide, heights to 12'...panels are constructed with tongue and groove for rigid, flush installation. Available in a wide variety of facing finishes. Applications are unlimited . . . ideal for Hotels, Restaurants, Offices, Funeral Parlors, Schools, Churches, Motels and Commercial Buildings.

Write today for complete information, or see our catalog in Sweets 22d/Ai

AirWall Inc.
1670 S. GARFIELD AV., PARAMOUNT, CALIF.
A SUBSIDIARY OF
RICHARDS-WILCOX MFG. CO.
AURORA, ILLINOIS

Circle 174 for further information

DEAR READER:

ARCHITECTURAL & ENGINEERING NEWS is your best source for *PRODUCTS, NEWS and TECHNOLOGY*.

For example, in product information alone, A&E NEWS reviewed 1,305 products and 1,290 product brochures in 1959 and 1960 issues. This is more product information than that presented by the other three architectural magazines *combined*.

Keep up to date . . . . . with PRODUCTS, NEWS and TECHNOLOGY through A&E NEWS.

The Publishers.

INDEX

to advertisers

54	Acme Metal Molding Co., Div. Northrop Architectural Systems	25	Insulrock Company, Div. Flintkote Company
18	Adams Rite Mfg. Co.	47	Irving Subway Grating Company
85	Air Wall, Inc., Div. Richards-Wilcox Mfg. Co.	55-56	Janitrol Div., Midland-Ross Corp.
84	Albro Metal Products	60	Kalwall Corp.
54	AllianceWall Div., AllianceWare, Inc.	40	Keller Products
28-29	American Hardware Corp., P & F Corbin Div.	50	Kinnear Mfg. Company
59	American Hardware Corp., Corbin Wood Products Div.	59	Lamont & Riley Company
cover 2	Anaconda American Brass Company	41	Lewis Asphalt Engineering Company
75-78	Armstrong Cork Company, Ceilings Div.	62	Libbey-Owens-Ford Glass Company
34	Armstrong Cork Company, Flooring Div.	81	Liskey Aluminum
72	Bally Case & Cooler Company	83	mcPhilben Lighting
33	Julius Blum & Company	21	R. C. Mahon Company
72	Charles Bruning Company	42	Maico Electronics
2-3	Cambridge Tile Mfg. Company	5	Marlo Coil Company
43	Philip Carey Mfg. Company	40	Melflex Products Company
48-49	Ceco Steel Products	55-56	Midland-Ross Corp., Janitrol Div.
12	Circle F Mfg. Company	51	Miller Company
22	Clearprint Paper Company	67	Mobay Chemical Company
31	Cookson Company	53	Mo-Sai Institute, Inc.
28-29	P & F Corbin Div., American Hardware Corp.	23-24	Mosaic Tile Company
59	Corbin Wood Products Div., American Hardware Corp.	65	Natco Corporation
37	Corning Glass Works	64	Northrop Architectural Systems, Acme Metal Molding Company Div.
20	Eugene Dietzgen Company	38	Norton Door Closer Co., Div. Yale & Towne Mfg. Company
70	Dor-O-Matic Div., Republic Industries	27	Pabco Floor Products Div., Fibreboard Paper Products Corp.
69	Dow Corning Corp.	81	Pass & Seymour, Inc.
cover 4	Dresser-Ideco Co., Div. Dresser Industries, Inc.	63	Frederick Post Company
46	Durez Plastics Div., Hooker Chemical Corp.	44-45	Prescolite Manufacturing Company
58	Ebco Mfg. Company	70	Republic Industries Inc., Dor-O-Matic Div.
80	Evans Products Co., Haskelite Mfg. Corp., Partitions Div.	cover 3	Rheem Mfg. Company, Ruud Mfg. Company Div.
66	Evans Products Co., Haskelite Mfg. Corp., Panel Div.	85	Richards-Wilcox Mfg. Company, Air Wall Div.
59	Faries-McMeekan, Inc.	17	H. H. Robertson Company
27	Fibreboard Paper Products Corp., Pabco Floor Products Div.	cover 3	Ruud Mfg. Company, Div. Rheem Mfg. Company
15	Firestone Rubber & Latex Products Div., Firestone Tire & Rubber Co.	81	Speakman Company
25	Flintkote Company, Insulrock Company Div.	35	Speedwalk Div., Stephens-Adamson Mfg. Company
72	General Electric Company	81	Sta-Crete, Inc.
58	Hartman Metal Fabricators, Inc.	71	Steel Joist Institute
80	Haskelite Mfg. Corp., Evans Products Co., Partitions Div.	35	Stephens-Adamson Mfg. Company, Speedwalk Div.
66	Haskelite Mfg. Corp., Evans Products Co., Panel Div.	11	Stonco Electric Products Company
52	Haws Drinking Faucet Company	82	Thiokol Chemical Corp.
50	Hendrick Mfg. Company	36	Tomic Sales & Engineering Company
59	Hollaender Mfg. Company	72	United States Bronze Sign Company
46	Hooker Chemical Corp., Durez Plastics Div.	4	United States Gypsum Company
		16	United States Plywood Company
		79	Westinghouse Electric Corp., Panelboard Div.
		57	White-Rodgers Company
		42	Williams Equipment & Supply
		38	Yale & Towne Mfg. Company, Norton Door Closer Div.
		6-7	Youngstown Sheet & Tube Co.
		68	Zero Weather Stripping Company

ARCHITECTURAL & ENGINEERING NEWS
HAGAN PUBLISHING CORP.
500 BLOOMFIELD AVE.
MONTCLAIR, N. J.
PILGRIM 6-6100

ADVERTISING REPRESENTATIVES

MONTCLAIR, N. J.
Ed Fregan
Dave Hagenbuch
Hagan Publishing Corp.
500 Bloomfield Ave.
Montclair, N. J.
PILGRIM 6-6100

NEW YORK, N. Y.
Ken Gray
Al Labou
Architectural & Engineering News
141 East 44th St.
New York 17, N. Y.
YUKON 6-7585

CHICAGO
Lew Hutchison
John MacKay
Architectural & Engineering News
360 N. Michigan Ave.
Chicago 1, Ill.
DEARBORN 2-1256

CLEVELAND
Ed George
Architectural & Engineering News
19615 Lake Road
Cleveland 16, Ohio
EDISON 3-2733

ATLANTA
J. Sidney Crane
J. Sidney Crane & Associates
22 8th St., N.E., Atlanta 9, Ga.
TRINITY 2-6720

DALLAS
Patrick K. Hall
Blanchard-Nichols, Inc.
532 Fidelity Union
Life Bldg.
Dallas 1, Texas
RIVERSIDE 7-9138

SAN FRANCISCO
Jules Thompson
Thompson & Clark Co.
681 Market St.
San Francisco 5, Calif.
DOUGLAS 2-8547

LOS ANGELES
Bob Clark
Thompson & Clark Co.
6000 Sunset Blvd., Rm. 202
Hollywood 28, Calif.
HOLLYWOOD 3-4111

CALENDAR

OCT. 12 SEMINARS ON CURTAIN WALL SEALING TECHNIQUES: sponsored by Thiokol Chemical Corporation and Dominion Rubber Company, Ltd., Park Plaza Hotel, Toronto, Canada.

16-20 NATIONAL SAFETY COUNCIL: annual convention, Chicago, Ill.

18-22 CALIFORNIA COUNCIL AIA: annual convention, Coronado, Calif.

19-21 ARCHITECTURAL SOCIETY OF OHIO: 1961 convention, at the Statler Hilton Hotel, Cleveland, O.

NOV. 1-3 AMERICAN CONCRETE INSTITUTE: 14th regional meeting, Dinkler-Tutwiler Hotel, Birmingham, Ala.

2-4 CONSULTING ENGINEERS COUNCIL: board of directors meeting, Miami Beach, Fla.

6-8 STRUCTURAL CLAY PRODUCTS INSTITUTE: annual convention, Shoreham Hotel, Washington, D.C.

8-10 TEXAS SOCIETY OF ARCHITECTS CONFERENCE: Hotel Texas, Fort Worth, Tex.

15 AIA GULF STATES REGIONAL CONVENTION: Capitol House Hotel, Baton Rouge, La.

15 SOCIETY OF PLASTICS ENGINEERS: regional technical conference on "Vinyl plastics in the household," at the Statler Hilton Hotel, New York, N. Y.

16 NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION: 35th annual meeting, at the Plaza Hotel, New York, N.Y.

17-18 BITUMINOUS CONCRETE HIGHWAY CONFERENCE: Pennsylvania State University, University Park, Pa.

28-30 BUILDING RESEARCH INSTITUTE: fall conferences, Mayflower Hotel, Washington, D. C.

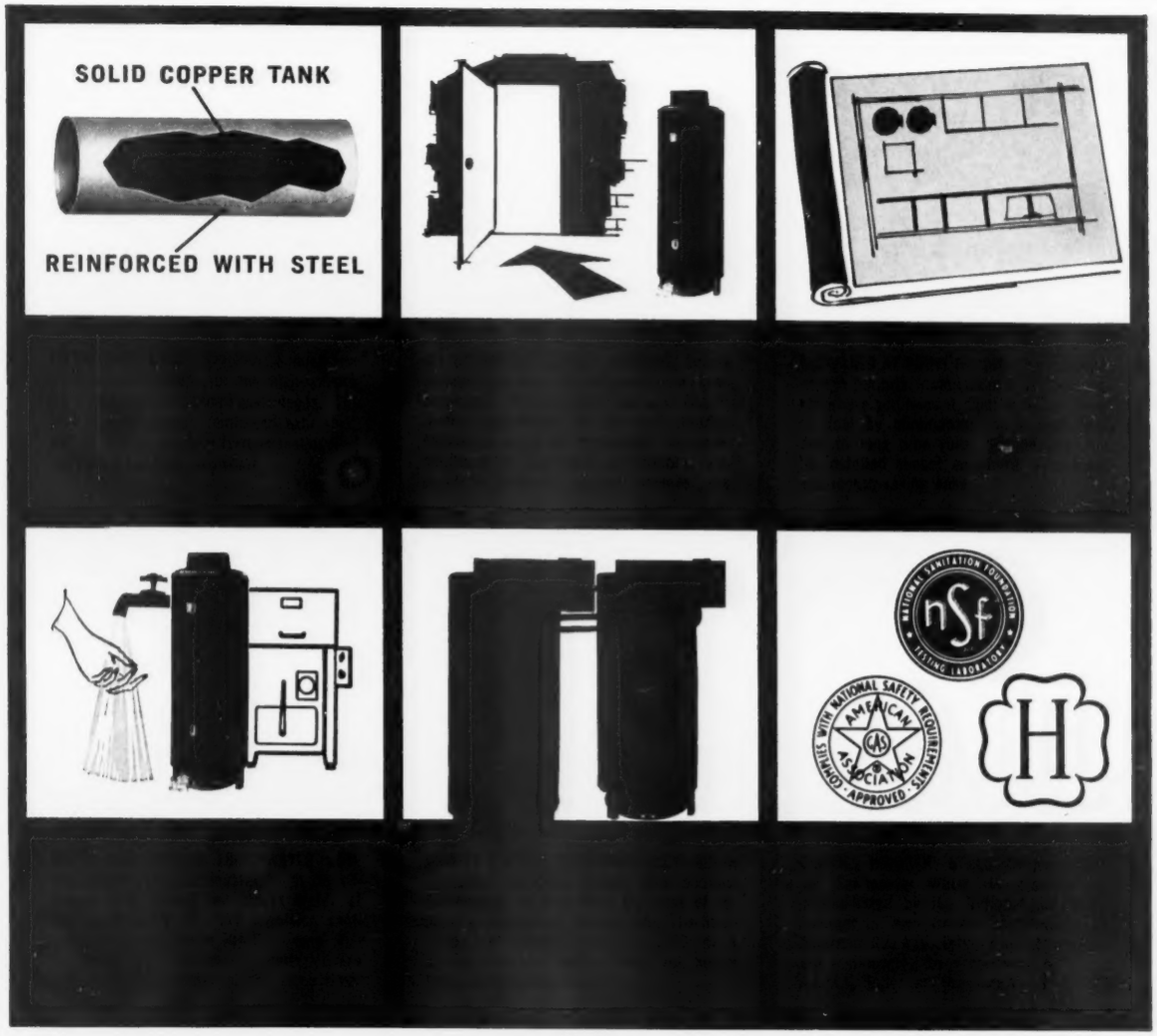
DEC. 3-7 NATIONAL ASSOCIATION OF HOME BUILDERS: annual convention — exposition, McCormick Place, Chicago, Ill.

JAN. 29-FEB. 2 AIEE ELECTRICAL ENGINEERING EXPOSITION: New York Coliseum, New York, N.Y.

6 reasons why you should specify a...

RUUD COPPER SANIMASTER

COMMERCIAL GAS WATER HEATER



RUUD

There are nine Ruud Copper Sanimaster Gas Water Heater models. Among them is the style and size exactly right for your hot water needs. Each Sanimaster operates economically on gas, and is warranted for five years. For more information, mail the coupon at right.

RUUD MANUFACTURING COMPANY

A subsidiary of Rheem Mfg. Co.

Manufacturers of commercial and residential water heaters of the highest quality.

FREE FACT-FILLED BROCHURE!

☐ Please send me a free, detailed brochure on the Ruud Copper Sanimaster line of commercial gas water heaters.

☐ I would also like information on how I can obtain the new Ruud Engineers Manual & Certified Sizing Guides.

RUUD MANUFACTURING COMPANY

7600 S. Kedzie Ave., Dept. NAAE-10, Chicago 52, Ill.

Name_____

Firm Name_____

Address_____

City_____ Zone____ State_____

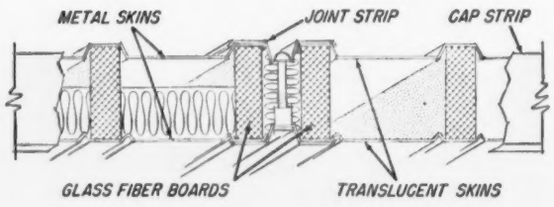
Circle 175 for further information

ARCHITECTURAL & ENGINEERING NEWS
Mailing Department
845 Ridge Avenue
Pittsburgh 12, Pennsylvania

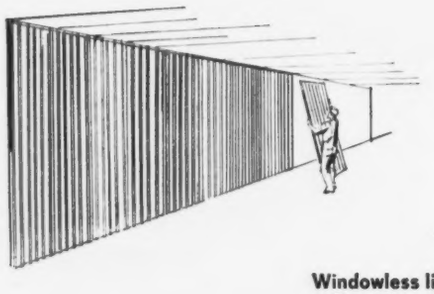
POSTMASTER: FORM 3547 REQUESTED

Wide module— Condo-panels are 32" in width. This is 8" to 20" wider than comparable metal curtain wall panels now available. Panels are completely pre-assembled. These factors mean faster erection, construction more nearly monolithic, fewer vertical joints. Available in lengths to 20' and thicknesses of 2", 3" and 4".

Low U-factors—U-factors range from .12 to .16—and these are conservative ratings that embrace all types of heat transfer through the walls, including joints.



High strength/weight ratio—Panels are light in weight (as little as 1.8 lbs. per sq. ft.), span up to 13 feet for a 20 lb. wind load, and can be stacked vertically. Ribs on 4½" centers provide both texture and rigidity.



Windowless light—Panels with translucent plastic skins are completely interchangeable with aluminum or steel panels... enable the designer to turn whole wall areas into windowless, insulating natural light sources.

New CONDO-WALL offers FOUR BASIC DESIGN IMPROVEMENTS in windowless curtain wall

Whatever the nature of the curtain wall job now on your board, you are invited to compare the features of Condo-wall with those of any other insulating panel. Before you specify that enclosure, call us collect in Columbus, Ohio—Area code 614 AXminster 9-2123, for literature and the name of our nearest representative. Ask for Martin Winter.

DRESSER-IDECO COMPANY
875 MICHIGAN AVENUE • COLUMBUS 15, OHIO

DRESSER IDECO®

DRESSER INDUSTRIES INC.
ELECTRONIC • INDUSTRIAL
OIL • GAS • CHEMICAL

DETAILED IN SWEET'S ARCHITECTURAL FILE $\frac{3a}{dr}$ *Complete literature on request*

Circle 176 for further information